# Xpelair XID
## Centrifugal metal inline fans

### Key features

| | |
|---|---|
| Application: | **Ducted inline ventilation** |
| Type: | **Centrifugal** |
| Control options: | **Speed control and humidity / PIR sensing** |

CE 3 Year Guarantee

### The Range

Inline duct systems have grown in popularity as a method of concealed ducted ventilation over the past two decades. The Xpelair **XID** inline range is engineered for trouble-free operation and delivered complete with adjustable mounting bracket.

These practical, reliable fans are ideal for ducted applications in shops, schools, factories, offices, pubs, hotels, restaurants, and kitchens and are available in a variety of duct size diameters to suit any application.

The range is manufactured in zinc coated corrosion resistant sheet metal with 30mm long spigot connections for ease of connection to ductwork.

The fans are suitable for use in ambient temperatures ranging from -30ºC to +50ºC. The fan is fully speed controllable using the **XIC1** speed controller.

A full choice of ventilation accessories is available to complement this range to design a complete system.

### Specification

**Casings**
Fan housing is manufactured in two halves from zinc coated sheet steel with formed bellmouth entry and duct attachment spigots 30mm deep.

There are fixings for two universal mounting brackets (supplied) for mounting at any angle and in any plane. The motor support / guide is in zinc coated sheet metal.

**Motors and Impellers**
Motors are IP44 external rotor type AC capacitor start and run and have maintenance free sealed for life ball bearings. Motor insulation is rated at Class F and motors are fitted with thermal overload protection.

Impellers are backward curved centrifugal, dynamically balanced in two planes to ISO 1940-1 :1986 Grade G.6 suitable for ambient temperatures from -30ºC to +50 C

**Terminal Box**
The terminal box is attached to the casing and also houses capacitor.

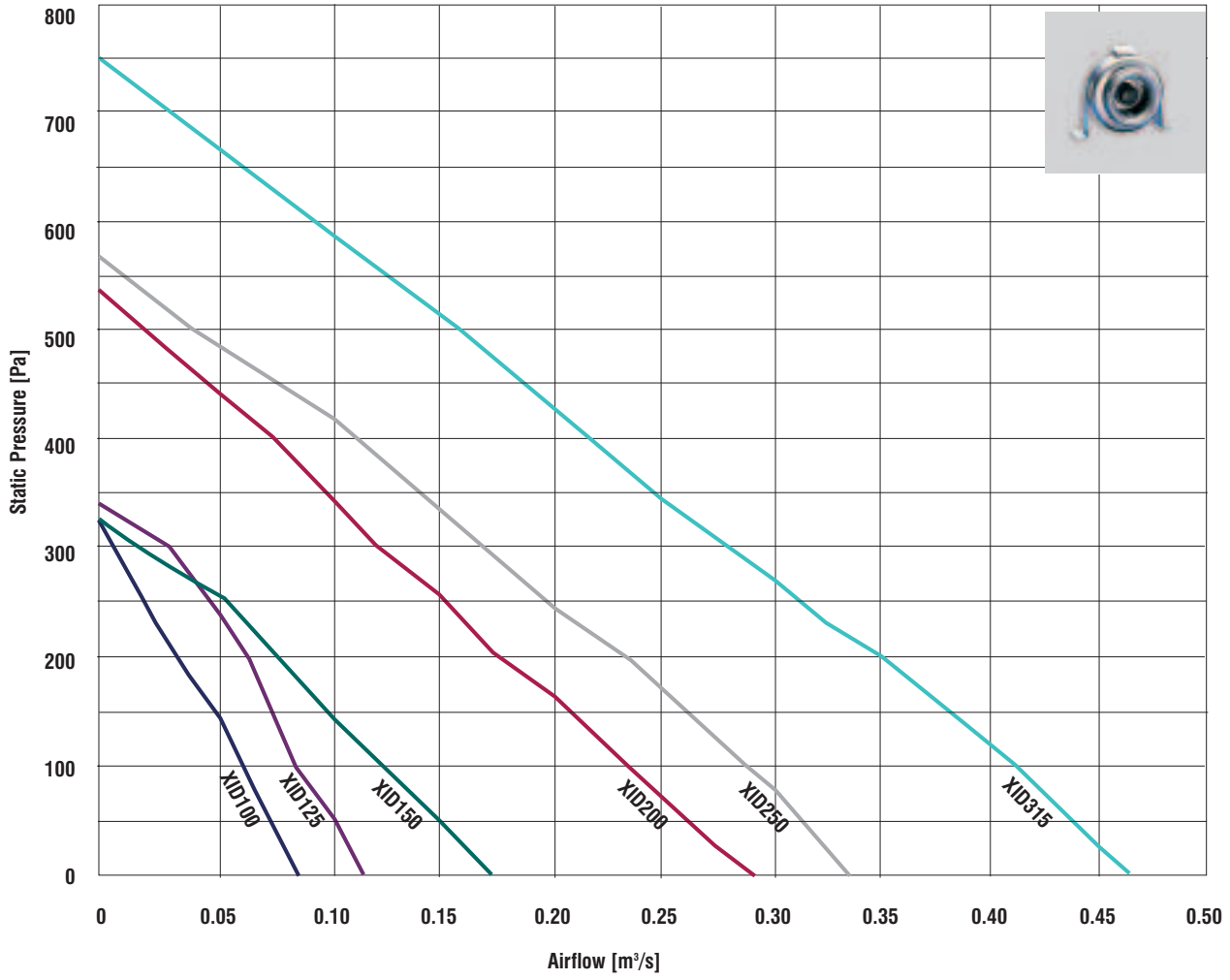
Electrical supply 220-240V single phase 50Hz.

The fan is fully speed controllable using the **XIC1** speed controller.

## Performance Data

| MODEL | | XID100 | XID125 | XID150 | XID200 | XID250 | XID315 |
|---|---|---|---|---|---|---|---|
| Reference number | | 90101AA | 90102AA | 90103AA | 90104AA | 90208AA | 90106AA |
| Spigot diameter (mm) | | 97 | 123 | 147 | 197 | 247 | 312 |
| Airflow ($m^3/s$) | 0Pa | 0.08 | 0.11 | 0.17 | 0.29 | 0.34 | 0.46 |
| | 100Pa | 0.06 | 0.09 | 0.12 | 0.23 | 0.29 | 0.41 |
| | 200Pa | 0.04 | 0.06 | 0.07 | 0.17 | 0.24 | 0.35 |
| | 300Pa | 0.01 | 0.03 | 0.02 | 0.12 | 0.17 | 0.28 |
| | 400Pa | | | | 0.08 | 0.11 | 0.22 |
| | 500Pa | | | | 0.02 | 0.04 | 0.16 |
| | 600Pa | | | | | | 0.09 |
| | 700Pa | | | | | | 0.03 |
| Sound pressure level (dB(A)@3m) | | 25 | 26 | 26 | 29 | 32 | 36 |
| Nominal fan speed (rpm) | | 2450 | 2450 | 2600 | 2500 | 2700 | 2390 |
| Max electrical power (W) | | 85 | 85 | 99 | 157 | 194 | 244 |
| Full load current (A) | | 0.4 | 0.4 | 0.4 | 0.7 | 0.8 | 1.0 |
| Starting current (A) | | 0.44 | 0.44 | 0.62 | 1.25 | 1.72 | 2.82 |
| Motor insulation class | | F | F | F | F | F | F |
| IP rating | | IPX4 | IPX4 | IPX4 | IPX4 | IPX4 | IPX4 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 |
| Weight (kg) | | 2.5 | 2.5 | 3.7 | 5 | 5.6 | 6.5 |

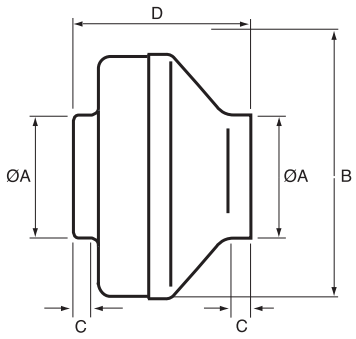
## Performance Graph



# Xpelair XID

## Centrifugal metal inline fans

### Dimensions



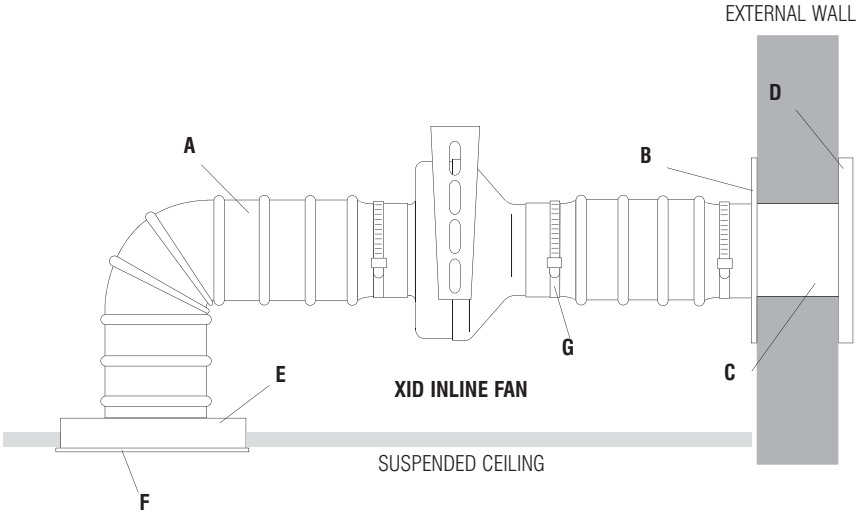

| Dimensions (mm) | | | | |
|---|---|---|---|---|
| **Model** | **A** | **B** | **C** | **D** |
| **XID100** | 97 | 320 | 30 | 240 |
| **XID125** | 123 | 320 | 30 | 240 |
| **XID150** | 147 | 360 | 30 | 250 |
| **XID200** | 197 | 404 | 35 | 250 |
| **XID250** | 247 | 404 | 35 | 260 |
| **XID315** | 312 | 444 | 40 | 260 |

### Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XID** range of inline fans.

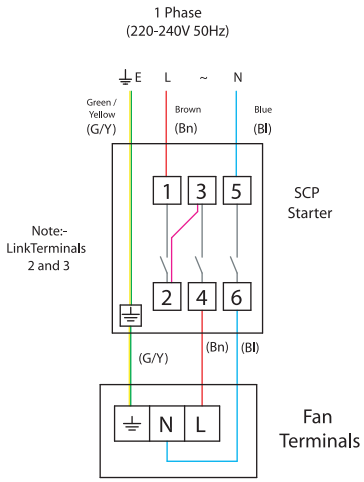
The installation diagram shows a typical **XID** ducted installation and associated accessories.

| | |
|---|---|
| **A** | Flexible ducting |
| **B** | Spigot plate |
| **C** | Wall duct |
| **D** | External air operated louvre shutter |
| **E** | Grille box |
| **F** | Ceiling grille |
| **G** | Worm drive clip |

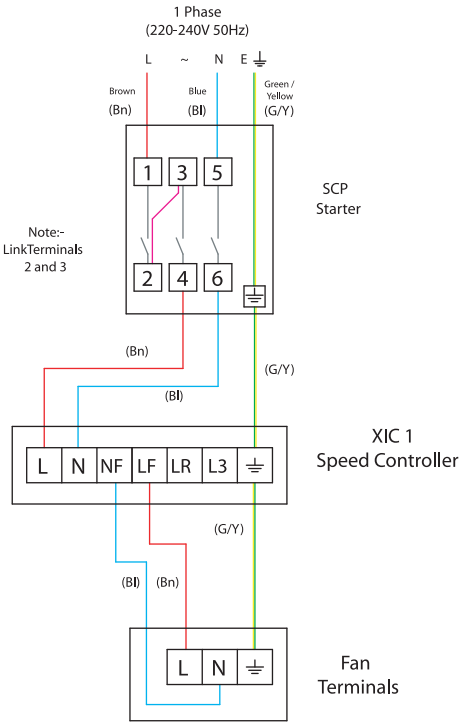



### Wiring Diagrams

#### XID with SCP Starter



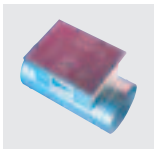
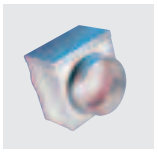
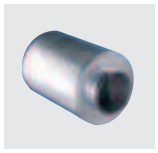
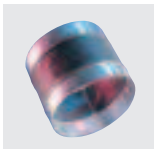
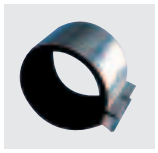

#### XID with XIC1 speed controller and SCP Starter

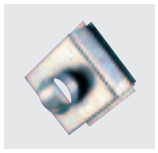
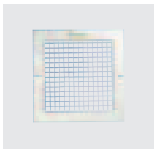
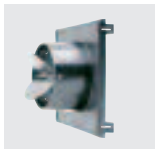


## Controllers

|  Model |  Inline Fan Controller XIC1 |  Remote Time Controller DT20B |  Remote Humidistat XRH |  Passive Infrared Sensor XPIRA |
|---|---|---|---|---|
| XID100 | 21858AW | 21850AW | 21856AW | 21871AW |
| XID125 | 21858AW | 21850AW | 21856AW | 21871AW |
| XID150 | 21858AW | 21850AW | 21856AW | 21871AW |
| XID200 | 21858AW | 21850AW | 21856AW | 21871AW |
| XID250 | 21858AW | 21850AW | 21856AW | 21871AW |
| XID315 | 21858AW | 21850AW | 21856AW | 21871AW |

## Accessories

|  Duct Diameter |  Inline Duct Heater IDH |  Bag Filter Cassette CFC |  Circular Silencer SIL |  Flexible Connection FFC |  Solid Duct Fastener XMK |  Louvre Shutter XLG |
|---|---|---|---|---|---|---|
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |

|  Duct Diameter |  Grille Box GB |  Egg-Crate Ceiling Grille (Silver) CG |  Spigot Plate/ Damper FWS |  Four Way Ceiling Diffuser FW |  Circular Air Valve CAV |  Aluminium Flexible Ducting Xflex ALU |
|---|---|---|---|---|---|---|
| 100mm | 89676AA + | 89675AA | | | 89682AA | 91435AA |
| 125mm | 89677AA + | 89675AA | | | 91490AA | 91436AA |
| 150mm | 89678AA + | 89675AA | 91430AA + | 91424AA | 89683AA | 91437AA |
| 200mm | 89679AA + | 89532AA | 91431AA + | 91424AA | | 91438AA |
| 250mm | 89680AA + | 89532AA | 91432AA + | 91425AA | | 91439AA |
| 315mm | 89681AA + | 89533AA | 91456AA + | 91426AA | | 91440AA |

# Xpelair XIDP

## Centrifugal plastic inline fans

### Key features

| | |
|---|---|
| Application: | **Ducted inline ventilation** |
| Type: | **Centrifugal** |
| Control options: | **Speed control and humidity / PIR sensing** |

CE 3 Year Guarantee

### The Range

Centrifugal inline fans provide the ideal ventilation solution for many exposed and high humidity applications.

The Xpelair **XIDP** range is suitable for applications where the unit will be seen - in wet areas such as kitchens, shower areas and a wide range of commercial situations. The **XIDP** range is based on the proven **XID** external rotor motor and impeller units to provide a range of high performance plastic inline fans.

The moulded casing is designed to provide the best possible bellmouth entry, guide vanes and outlet. The wall thickness provides sound insulation and will not corrode. The case is both impact and fire resistant and a mounting foot is provided for fast and easy installation.

Available in six popular sizes the range is compatible with Xpelair **Xflex** ducts and ventilation components.

### Specification

**Casings and terminal box**
Fan housing manufactured from impact resistant and fire retardant polymer with integral bellmouth entry guide vanes, motor support and terminal connection box The duct connection spigots are 30mm deep. A Universal mounting bracket is supplied for fixing in any plane and at any angle.

**Motors and Impellers**
Motors are IP44 external rotor type AC capacitor start and run and have maintenance free sealed for life ball bearings. Motor insulation is rated at Class F and motors are fitted with thermal overload protection.

Impellers are backward curved centrifugal, dynamically balanced in two planes to ISO 1940-1 :1986 Grade G.6 suitable for ambient temperatures from -30ºC to +50 C

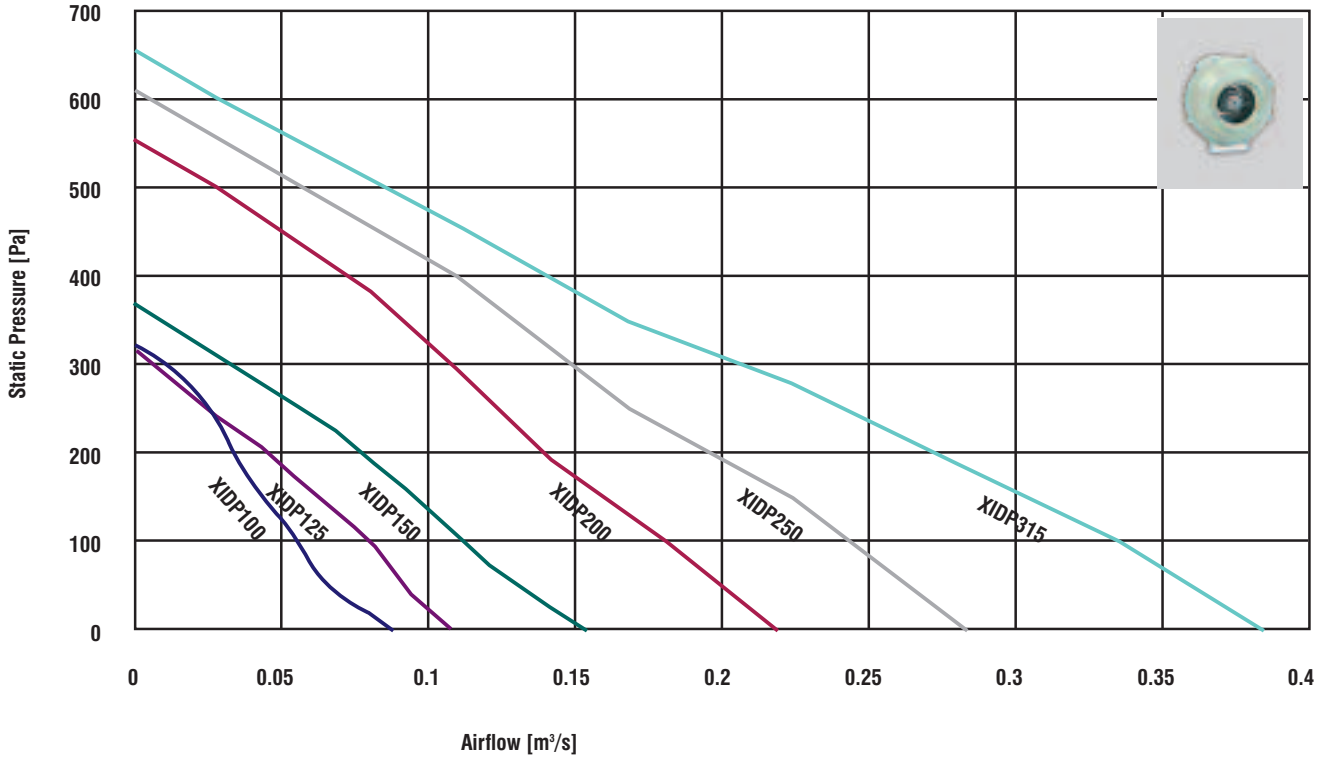
Electrical supply 220-240V single phase 50Hz.

The fan is fully speed controllable using the **XIC1** speed controller.

## Performance Data

| MODEL | | XIDP100 | XIDP125 | XIDP150 | XIDP200 | XIDP250 | XIDP315 |
|---|---|---|---|---|---|---|---|
| Reference number | | 91383AA | 91384AA | 91385AA | 91386AA | 91387AA | 91388AA |
| Spigot diameter (mm) | | 99 | 124 | 149 | 199 | 249 | 314 |
| Airflow ($m^3/s$) | 0Pa | 0.07 | 0.10 | 0.15 | 0.22 | 0.28 | 0.38 |
| | 100Pa | 0.05 | 0.08 | 0.11 | 0.18 | 0.24 | 0.33 |
| | 200Pa | 0.03 | 0.05 | 0.08 | 0.14 | 0.20 | 0.27 |
| | 300Pa | 0.01 | 0.01 | 0.03 | 0.11 | 0.15 | 0.21 |
| | 400Pa | | | | 0.08 | 0.11 | 0.14 |
| | 500Pa | | | | 0.02 | 0.06 | 0.09 |
| | 600Pa | | | | | 0.01 | 0.03 |
| Sound pressure level (dB(A)@3m) | | 24 | 25 | 25 | 28 | 31 | 41 |
| Nominal fan speed (rpm) | | 2450 | 2450 | 2600 | 2500 | 2700 | 2390 |
| Max electrical power (W) | | 85 | 85 | 99 | 157 | 194 | 244 |
| Full load current (A) | | 0.3 | 0.3 | 0.3 | 0.6 | 0.7 | 1.1 |
| Starting current (A) | | 0.44 | 0.44 | 0.62 | 1.25 | 1.72 | 2.82 |
| Motor insulation class | | F | F | F | F | F | F |
| IP rating | | IPX4 | IPX4 | IPX4 | IPX4 | IPX4 | IPX4 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 |
| Weight (kg) | | 2.5 | 2.5 | 3.7 | 5 | 5.6 | 6.5 |

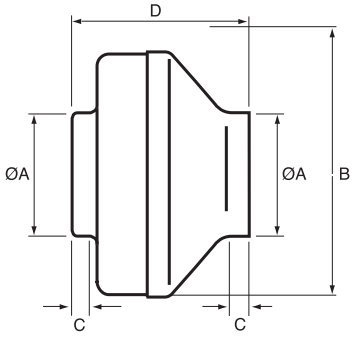
## Performance Graph



# Xpelair XIDP

## Centrifugal plastic inline fans

### Dimensions



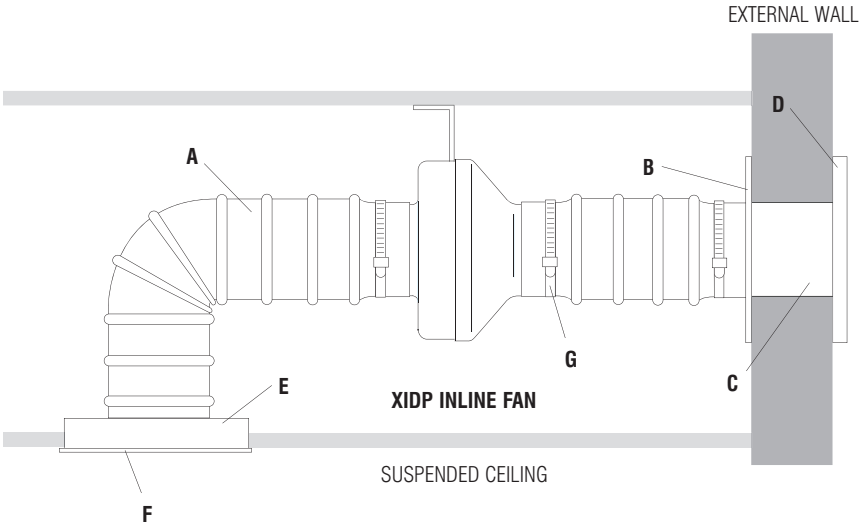

| Model | Dimensions (mm) ØA | B | C | D |
|---|---|---|---|---|
| XIDP100 | 99 | 288 | 30 | 247 |
| XIDP125 | 124 | 288 | 30 | 247 |
| XIDP150 | 149 | 379 | 30 | 230 |
| XIDP200 | 199 | 379 | 30 | 230 |
| XIDP250 | 249 | 379 | 30 | 230 |
| XIDP315 | 314 | 452 | 30 | 275 |

### Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XIDP** range of inline fans.

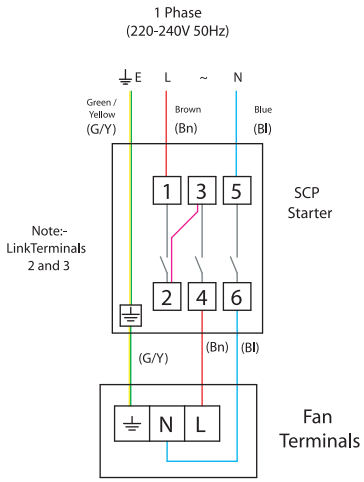
The installation diagram shows a typical **XIDP** ducted installation and associated accessories.

| | |
|---|---|
| **A** | Flexible ducting |
| **B** | Spigot plate |
| **C** | Wall duct |
| **D** | External air operated louvre shutter |
| **E** | Grille box |
| **F** | Ceiling grille |
| **G** | Worm drive clip |

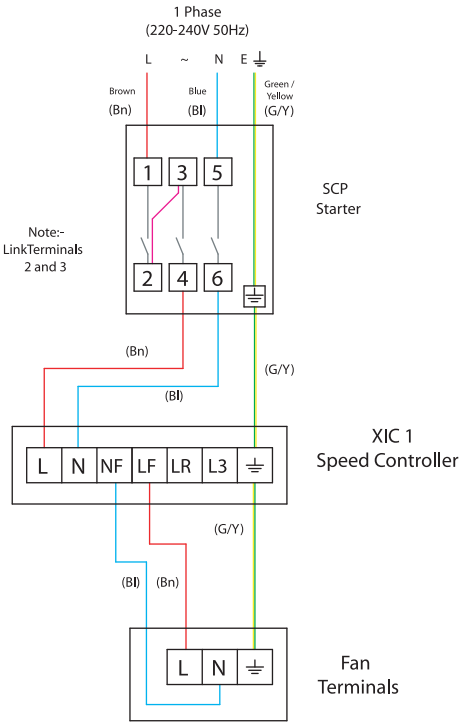



### Wiring Diagrams

#### XIDP with SCP Starter




#### XIDP with XIC1 speed controller and SCP Starter



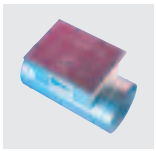
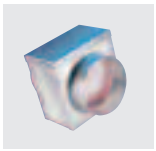
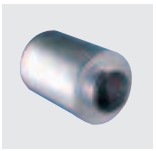
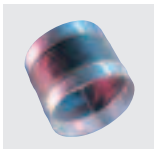
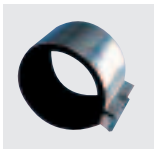
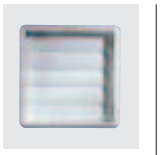
## Controllers



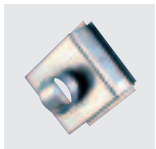
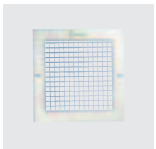
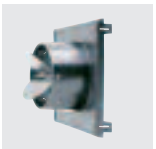


| Model | Inline Fan Controller XIC1 | Remote Time Controller DT20B | Remote Humidistat XRH | Passive Infrared Sensor XPIRA |
|---|---|---|---|---|
| XIDP100 | 21858AW | 21850AW | 21856AW | 21871AW |
| XIDP125 | 21858AW | 21850AW | 21856AW | 21871AW |
| XIDP150 | 21858AW | 21850AW | 21856AW | 21871AW |
| XIDP200 | 21858AW | 21850AW | 21856AW | 21871AW |
| XIDP250 | 21858AW | 21850AW | 21856AW | 21871AW |
| XIDP315 | 21858AW | 21850AW | 21856AW | 21871AW |

## Accessories

| Duct Diameter | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG |
|---|---|---|---|---|---|---|
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |


| Duct Diameter | Grille Box GB | | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | | Four Way Ceiling Diffuser FW | Circular Air Valve CAV | Aluminium Flexible Ducting Xflex ALU |
|---|---|---|---|---|---|---|---|---|
| 100mm | 89676AA | + | 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA | + | 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA | + | 89675AA | 91430AA | + | 91424AA | 89683AA | 91437AA |
| 200mm | 89679AA | + | 89532AA | 91431AA | + | 91424AA | | 91438AA |
| 250mm | 89680AA | + | 89532AA | 91432AA | + | 91425AA | | 91439AA |
| 315mm | 89681AA | + | 89533AA | 91456AA | + | 91426AA | | 91440AA |

# Xpelair Xpress XPRS

## High pressure mixed flow inline duct fans

### Key features

| | |
|---|---|
| Application: | **Ducted inline ventilation** |
| Type: | **Mixed flow** |
| Control options: | **5 step transformer speed controller** |

CE 2 Year Guarantee

### The Range

The New Xpelair **Xpress** range redefines inline fan performance to provide ultra high pressure development, volume and efficiency allowing smaller ductwork to be used than conventional inline fans.

At the heart of the design is a dynamically balanced mixed flow impeller and bellmouth entry with minimised clearances to ensure optimum pressure development. Transferred though a meridian channel, the air then enters a static three dimensional guide vane. This dihedral twist retains a third of the pressure build up which would otherwise be lost. The air management is so efficient that air turbulence noise and vibration associated with centrifugal inline fans is virtually eliminated. For example an **Xpress** 250mm at 200Pa has a volume output double that of an equivalent size centrifugal inline fan and 50% higher than 315mm. This impressive performance means that smaller ducts can be chosen with an energy use lower than most DC fans of the same performance. **Xpress** is no bigger in diameter than the ductwork in which it is mounted. No flanges are required; simply flexible connections. It comes with its own mounting foot which is factory fitted to eliminate on site assembly. And the new Xpelair **Xpress** can be run at any angle.

Space saving, smaller ductwork, quieter and costing less to run, the technically advanced Xpelair **Xpress** redefines inline performance.

### Specification

**Casings**
The fan has high precision steel casing with flush seam weld for a close tolerance fit. Spigots are fitted with stops. There is a contoured steel bellmouth entry and integrated mounting foot and terminal connection box bracket. The fan diameter is no bigger than the duct in which it is installed.

**Fans**
The robotically assembled fabricated polymer mixed flow blade has twin seals for optimum pressure development. Balanced on the hub in two planes to G2.5 ISO 1940.

**Guide Vane**
Moulded three dimensional aerofoil stator and diffuser retains up to a third of pressure development that would otherwise be lost.

**Motors**
Totally enclosed, continuously rated, capacitor start with maintenance free sealed for life bearings. Fitted with integrated thermal overload protection. Class F. Maximum ambient temperature up to 50ºC.

**Terminal box**
Fully accessible on the outside of the unit rated to IP44.

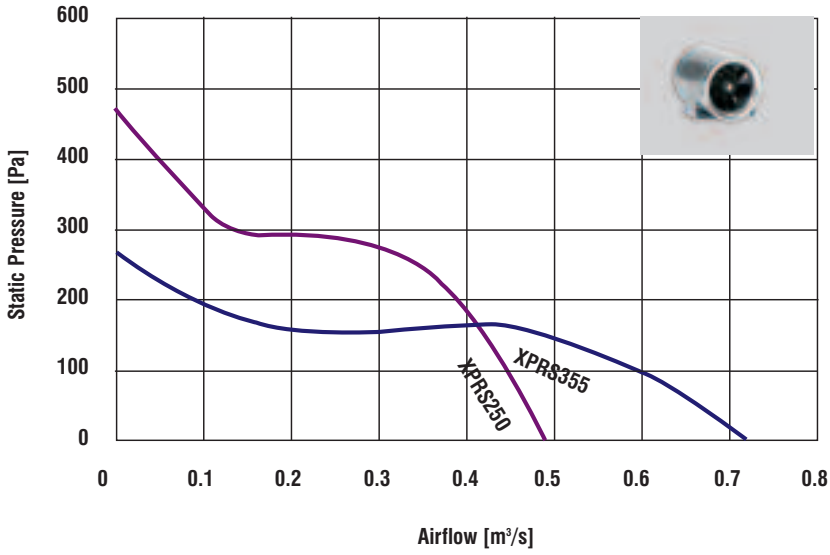
Electrical supply 220-240V single phase 50Hz.

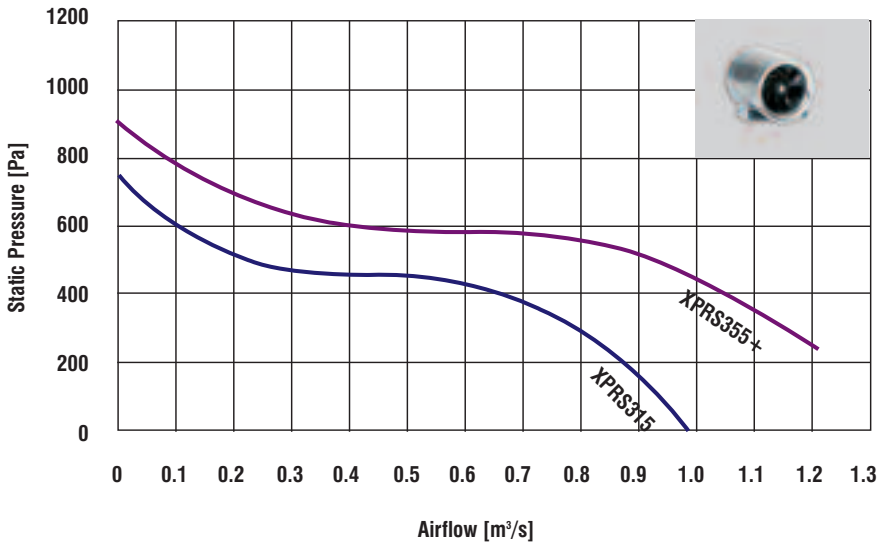
**Controller**
Fully voltage speed controllable using a 5 step transformer speed controller.

## Performance Data

| MODEL | | XPRS250 | XPRS315 | XPRS355 | XPRS355+ |
|---|---|---|---|---|---|
| Reference number | | 91498AA | 91499AA | 91560AA | 91501AA |
| Spigot diameter (mm) | | 250 | 315 | 355 | 355 |
| Airflow (m³/s) | 0Pa | 0.49 | 0.99 | 0.73 | 1.36 |
| | 100Pa | 0.44 | 0.93 | 0.59 | 1.31 |
| | 200Pa | 0.38 | 0.88 | | 1.25 |
| | 300Pa | 0.13 | 0.79 | | 1.14 |
| | 400Pa | | 0.63 | | 1.04 |
| | 500Pa | | 0.20 | | 0.90 |
| | 600Pa | | 0.11 | | 0.41 |
| | 700Pa | | | | 0.18 |
| Nominal fan speed (rpm) | | 2750 | 2750 | 1440 | 2740 |
| Max electrical power (W) | | 200 | 600 | 160 | 870 |
| Full load current (A) | | 0.9 | 2.7 | 0.7 | 3.9 |
| Starting current (A) | | 1.2 | 3.4 | 1.2 | 4.8 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 |
| Max operating temperature (ºC) | | 50 | 50 | 50 | 50 |
| Weight (kg) | | 7 | 14 | 14 | 17 |

## Performance Graph



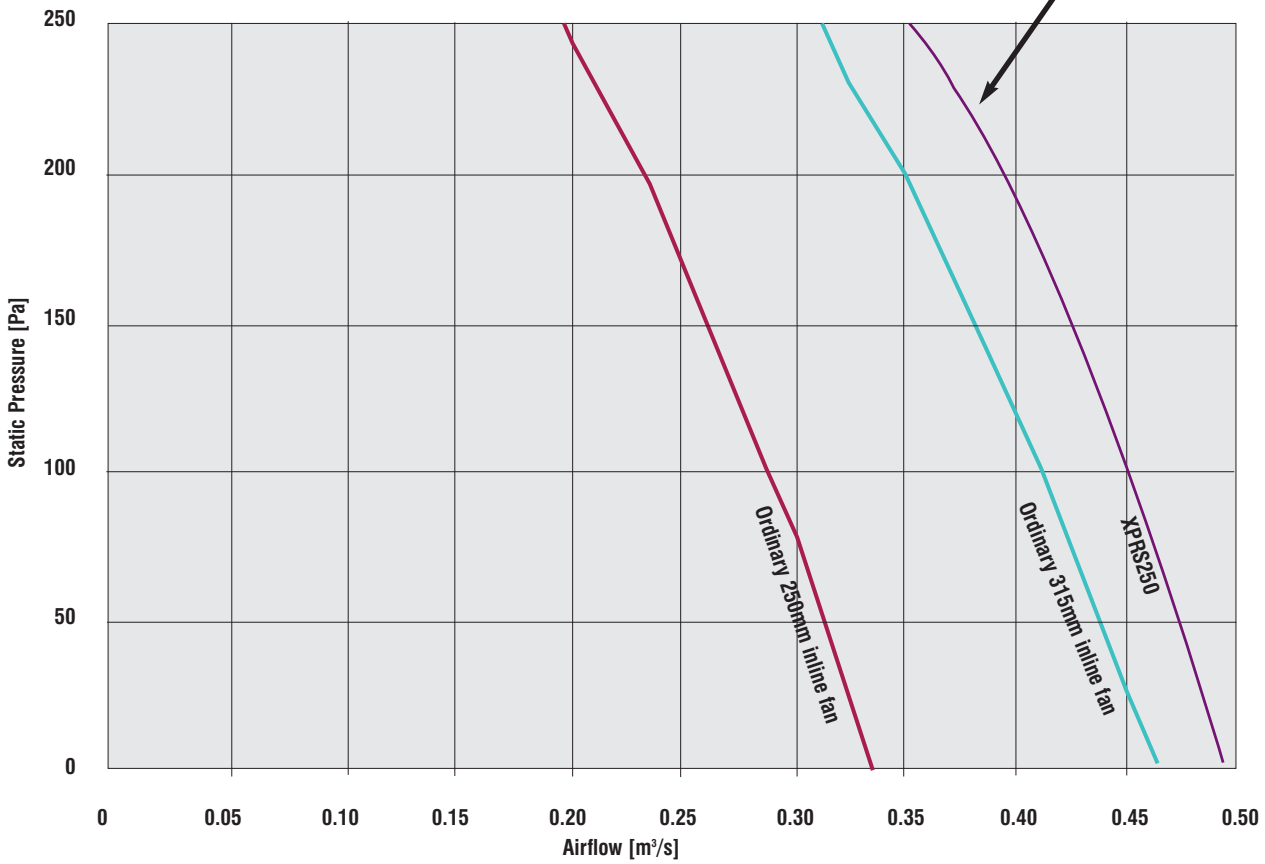



# Xpelair Xpress XPRS

## High pressure mixed flow inline duct fans

### Performance Comparison

See how much more powerful Xpress is compared to ordinary inline fans

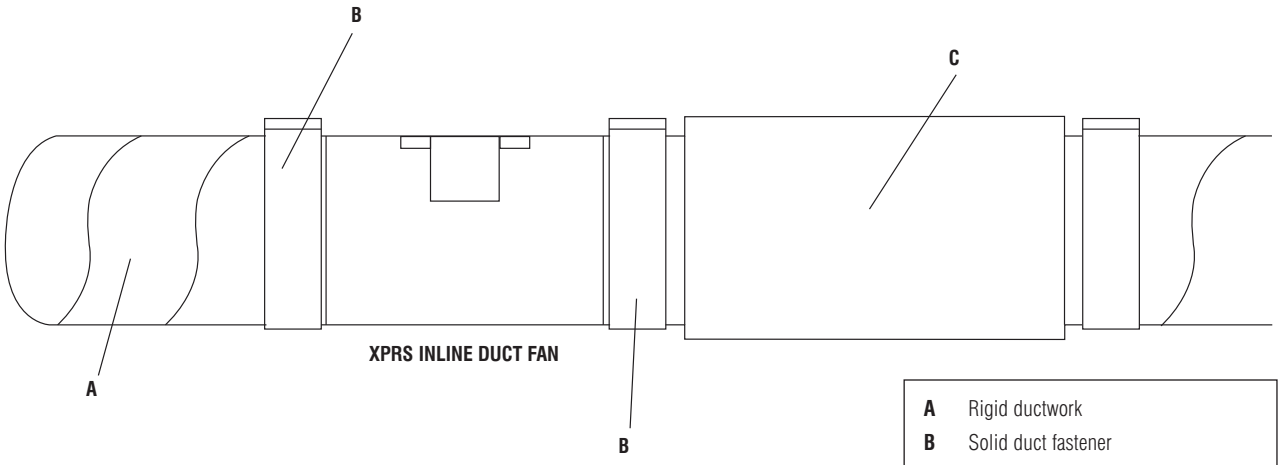



### Sound Power Data

Sound power level spectra dB and free field sound levels dB(A) at 3m with spherical propagation. Measured at 0Pa static pressure

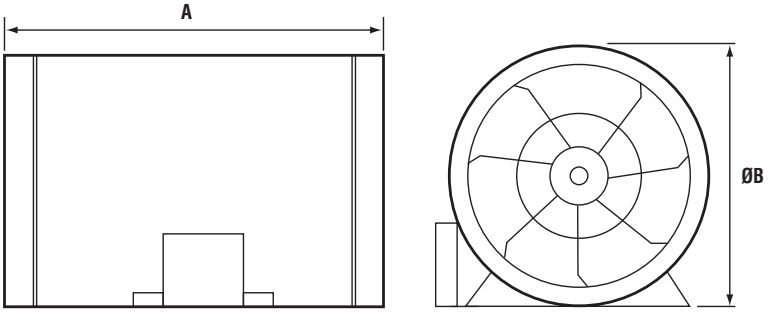
| MODEL | | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | 16kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|---|
| XPRS250 | inlet | 40 | 62 | 65 | 70 | 71 | 72 | 59 | 48 | 76 |
| | outlet | 43 | 67 | 73 | 75 | 75 | 71 | 60 | 48 | 80 |
| XPRS315 | inlet | 48 | 70 | 71 | 74 | 74 | 75 | 73 | 61 | 81 |
| | outlet | 52 | 73 | 79 | 81 | 79 | 74 | 71 | 58 | 85 |
| XPRS355 | inlet | 51 | 57 | 61 | 62 | 63 | 63 | 48 | 43 | 69 |
| | outlet | 56 | 60 | 66 | 67 | 64 | 60 | 47 | 39 | 72 |
| XPRS355+ | inlet | 53 | 74 | 75 | 78 | 77 | 76 | 74 | 75 | 84 |
| | outlet | 57 | 75 | 83 | 84 | 81 | 77 | 70 | 62 | 88 |

## Installation




| | |
|---|---|
| **A** | Rigid ductwork |
| **B** | Solid duct fastener |
| **C** | Silencer |

## Dimensions

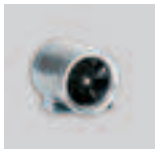



| Model | Dimensions (mm) A | ØB |
|---|---|---|
| **XPRS250** | 300 | 250 |
| **XPRS315** | 360 | 315 |
| **XPRS355** | 430 | 355 |
| **XPRS355+** | 430 | 355 |

# Xpelair Xpress XPRS

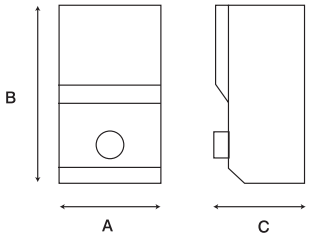
## High pressure mixed flow inline duct fans

### Controllers



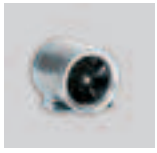
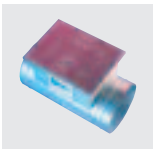
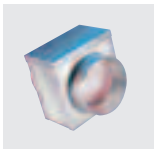
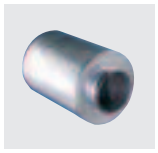

| | 5 Step Transformer Speed Controller T1 | Starter with Thermal Overload Protection STP1 | Starter with Current Sensing Overload Protection SCP |
|---|---|---|---|
| XPRS250 | 91367AA | N/A | 92198AA |
| XPRS315 | 91368AA | 91372AA | N/A |
| XPRS355 | 91367AA | N/A | 92198AA |
| XPRS355+ | 91369AA | 91372AA | N/A |

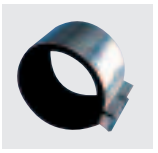
Dimensions of 5 Step Transformer Speed Controller



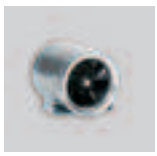
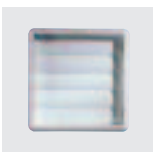
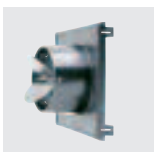

| Dimensions (mm) | | | |
|---|---|---|---|
| Model | A | B | C |
| T1 - 1.5A | 105 | 180 | 98 |
| T1 - 3.5A | 166 | 230 | 118 |
| T1 - 6A | 166 | 230 | 118 |
| T1 - 7.5A | 240 | 284 | 131 |
| T1 - 12A | 270 | 323 | 163 |

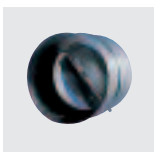
### Accessories



| Duct Diameter | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK |
|---|---|---|---|---|---|
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA |
| 355mm | | 92244AA | | | 91968AA |

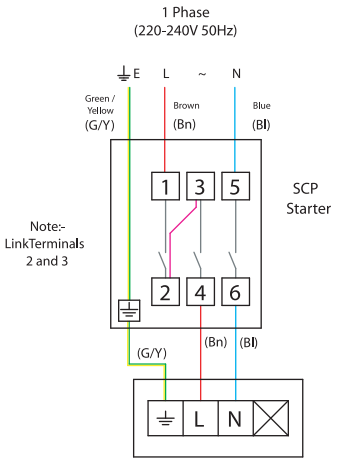







| Duct Diameter | Louvre Shutter XLG | Spigot Plate/ Damper FWS | | Four Way Ceiling Diffuser FW | Backdraught Shutter XBD | Aluminium Flexible Ducting Xflex ALU |
|---|---|---|---|---|---|---|
| 250mm | 89695AA | 91432AA | + | 91425AA | 89640AA | 91439AA |
| 315mm | 89696AA | 91456AA | + | 91426AA | 89641AA | 91440AA |
| 355mm | | | | | 92256AA | |

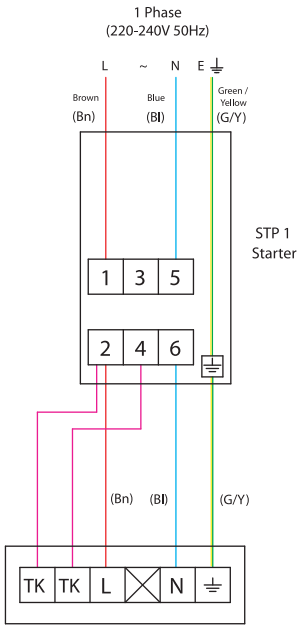
## Wiring Diagrams

### XPRS250/355 with SCP Starter



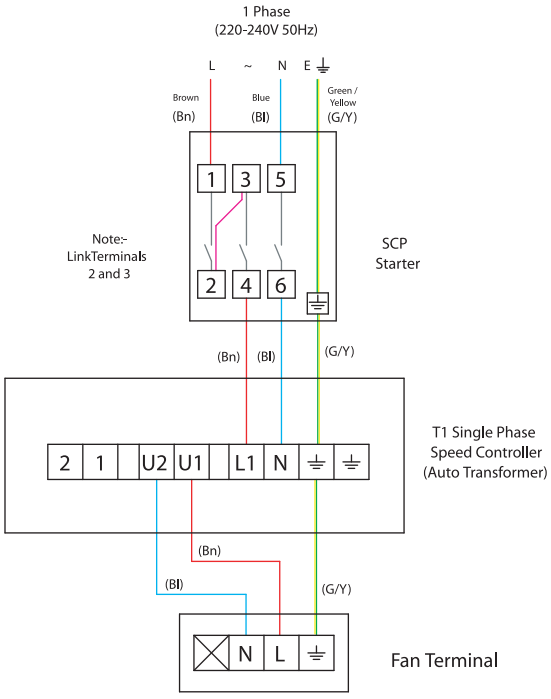

Fan Terminal

### XPRS 315/355+ with STP1 Starter with thermal overload protection




Fan Terminal with TK Terminals

### XPRS250/355 with T1 5 step transformer speed controller and SCP Starter

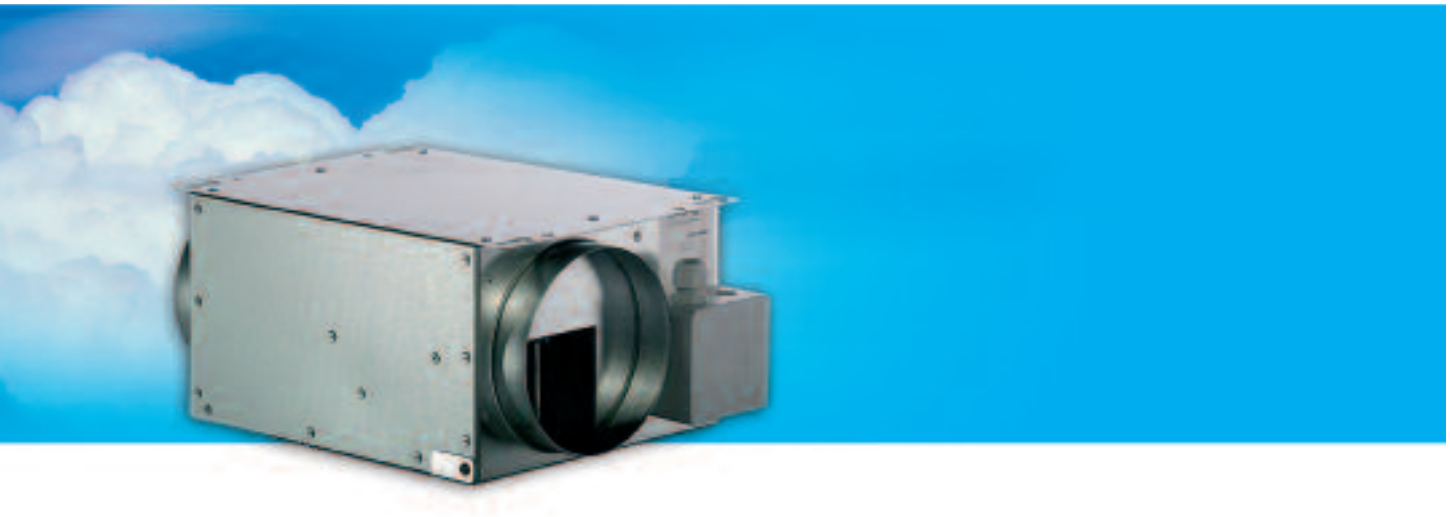



Fan Terminal

# Xpelair MinimX C XCDF

## Compact inline duct fans

NEW



### Key features

| | |
|---|---|
| Application: | **Compact inline** |
| Type: | **Centrifugal** |
| Control options: | **Speed control and humidity/PIR sensing** |

CE 2 Year Guarantee

### The Range

In many ducted systems ceiling space can be severely restricted preventing the use of circular inline fans. The new Xpelair **MinimX** range of inline fans reduces the product height to a minimum, providing system design flexibility and easier installation.

Available to suit the six most popular duct sizes, the Xpelair **MinimX** range features fully speed controllable two pole external rotor motors built with matching speed controllers and auto sensor control options available.

For ease of service inspection and cleaning the motor/fan unit swings out on a hinged access door. The precision made housing has integrated mounting flanges with key hole 'first-fit' slots and an accessible terminal box for fast assembly and wiring.

A full range of Xpelair Ventilation accessories allow the design of a complete system.

**Integral keyhole fixings for fast and easy installation**

### Specification

**Casings**

Manufactured in galvanised sheet metal with a coated surface to resist finger marks. The circular spigots and end plates are a single pressing providing extra rigidity. The range is provided with a motor/capacitor/terminal box all mounted on a single hinged panel allowing access for service inspection. The casing has two flanges with both keyhole and static fixing points.

**Motors and Impellers**

Motors are IP44 external rotor type AC capacitor start and run and have maintenance free sealed for life ball bearings. Motor insulation is rated at Class B or F and motors are fitted with thermal overload protection.

Impellers are backward curved centrifugal, dynamically balanced in two planes to ISO 1940-1 :1986 Grade G.6 suitable for ambient temperatures from -30ºC to +50ºC

**Terminal Box**

The IP44 terminal box is attached to the casing and also houses capacitor.

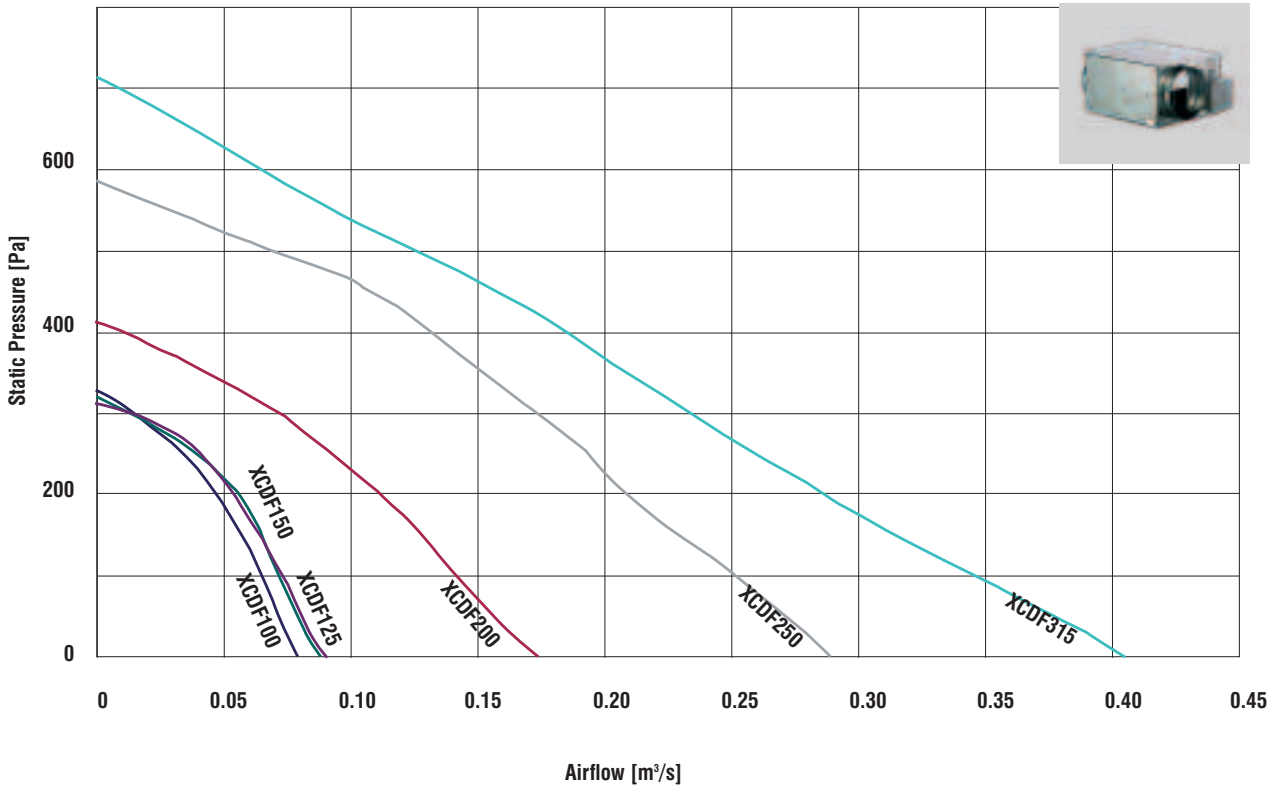
Electrical supply 220-240V single phase 50Hz.

The fan is fully speed controllable using the **XIC1** speed controller.

## Performance Data

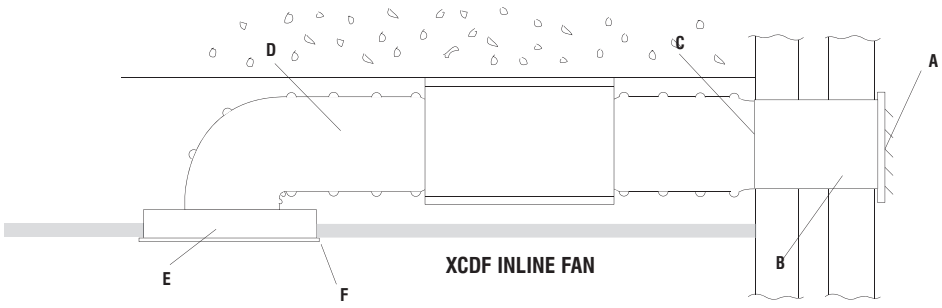
| MODELS | | XCDF100 | XCDF125 | XCDF150 | XCDF200 | XCDF250 | XCDF315 |
|---|---|---|---|---|---|---|---|
| Reference number | | 91502AA | 91503AA | 91504AA | 91505AA | 91506AA | 91507AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 |
| Airflow ($m^3/s$) | 0Pa | 0.08 | 0.09 | 0.09 | 0.18 | 0.29 | 0.41 |
| | 100Pa | 0.06 | 0.08 | 0.07 | 0.15 | 0.25 | 0.35 |
| | 200Pa | 0.05 | 0.05 | 0.06 | 0.11 | 0.21 | 0.28 |
| | 300Pa | | 0.01 | 0.01 | 0.07 | 0.17 | 0.23 |
| | 400Pa | | | | 0.01 | 0.14 | 0.19 |
| | 500Pa | | | | | 0.07 | 0.13 |
| | 600Pa | | | | | | 0.07 |
| Nominal fan speed (rpm) | | 1980 | 1820 | 1870 | 2550 | 2520 | 2280 |
| Max electrical power (W) | | 95 | 95 | 95 | 95 | 190 | 290 |
| Full load current (A) | | 0.40 | 0.40 | 0.40 | 0.40 | 0.85 | 1.30 |
| Starting current (A) | | 0.50 | 0.50 | 0.50 | 0.80 | 1.40 | 2.00 |
| Motor insulation class | | B | B | B | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 |
| Max operating temperature (°C) | | 60 | 60 | 60 | 80 | 60 | 55 |
| Weight (kg) | | 5.0 | 5.0 | 5.0 | 9.5 | 11.0 | 13.0 |

## Performance Graph




## Installation

| | |
|---|---|
| **A** | Louvred wall shutter XLG |
| **B** | Wall duct WD |
| **C** | Spigot plate SP |
| **D** | Xflex ducting |
| **E** | Grille box GB |
| **F** | Egg-crate grille CG |



# Xpelair MinimX C XCDF

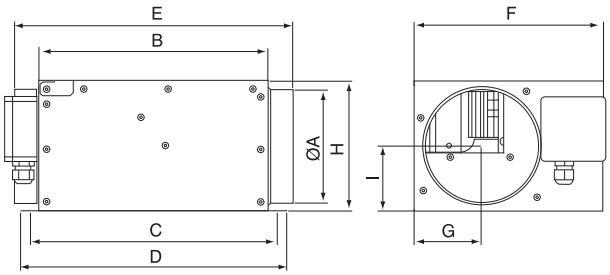
## Compact inline duct fans

### Sound Power Data

Sound power level spectra dB and free field sound levels dB(A) at 3m with spherical propagation. Measured at 0Pa static pressure

| MODEL | | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| | inlet | 54 | 52 | 51 | 53 | 52 | 52 | 47 | 60 |
| XCDF100 | outlet | 52 | 56 | 55 | 62 | 61 | 57 | 52 | 66 |
| | casing breakout | 38 | 42 | 43 | 44 | 42 | 38 | 33 | 50 |
| | inlet | 53 | 56 | 54 | 54 | 54 | 53 | 48 | 62 |
| XCDF125 | outlet | 49 | 58 | 57 | 62 | 61 | 57 | 53 | 67 |
| | casing breakout | 38 | 42 | 43 | 44 | 42 | 38 | 33 | 50 |
| | inlet | 51 | 58 | 55 | 54 | 54 | 54 | 49 | 63 |
| XCDF150 | outlet | 45 | 58 | 58 | 63 | 61 | 57 | 53 | 67 |
| | casing breakout | 38 | 42 | 43 | 44 | 42 | 38 | 33 | 50 |
| | inlet | 53 | 59 | 65 | 59 | 58 | 56 | 46 | 68 |
| XCDF200 | outlet | 54 | 60 | 67 | 66 | 64 | 60 | 48 | 72 |
| | casing breakout | 39 | 46 | 51 | 42 | 41 | 36 | 28 | 53 |
| | inlet | 60 | 65 | 67 | 64 | 62 | 62 | 56 | 72 |
| XCDF250 | outlet | 59 | 64 | 72 | 70 | 68 | 64 | 57 | 76 |
| | casing breakout | 47 | 52 | 55 | 48 | 46 | 44 | 37 | 58 |
| | inlet | 58 | 65 | 66 | 65 | 65 | 63 | 57 | 72 |
| XCDF315 | outlet | 60 | 66 | 72 | 70 | 69 | 64 | 59 | 76 |
| | casing breakout | 52 | 54 | 55 | 50 | 48 | 45 | 39 | 60 |

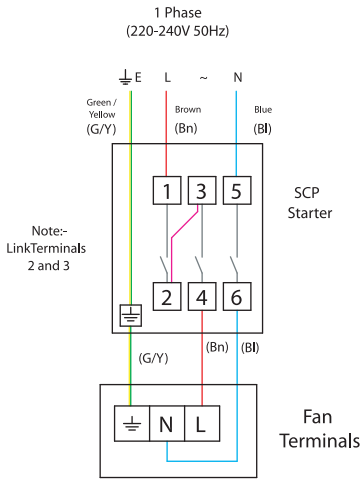
### Dimensions



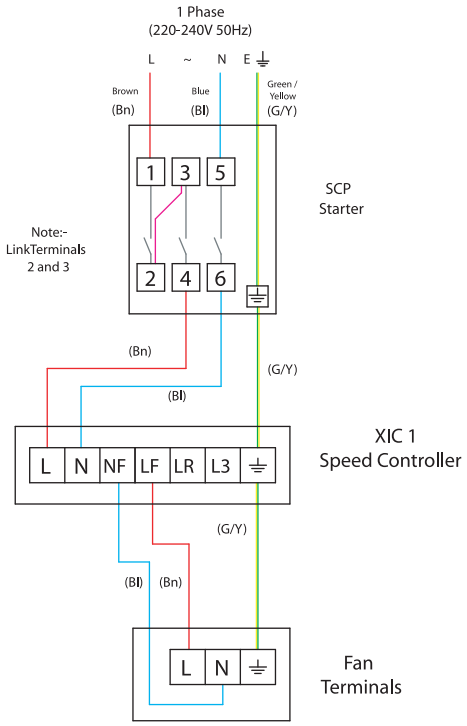

| Dimensions (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Model | ØA | B | C | D | E | F | G | H | I |
| XCDF100 | 100 | 300 | 324 | 348 | 350 | 248 | 72 | 170 | 110 |
| XCDF125 | 125 | 300 | 324 | 348 | 350 | 248 | 79 | 170 | 98 |
| XCDF150 | 150 | 300 | 324 | 348 | 364 | 248 | 89 | 170 | 85 |
| XCDF200 | 200 | 400 | 424 | 448 | 479 | 350 | 115 | 230 | 115 |
| XCDF250 | 250 | 400 | 424 | 448 | 478 | 350 | 141 | 280 | 140 |
| XCDF315 | 315 | 400 | 424 | 448 | 478 | 400 | 174 | 345 | 173 |

### Wiring Diagrams

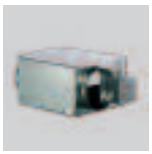
#### XCDF with SCP Starter



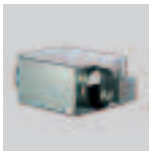
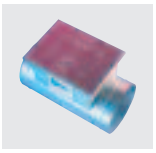
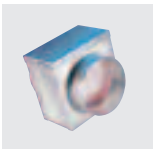
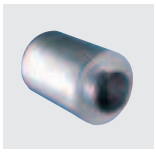
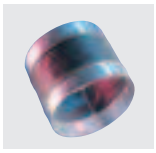

#### XCDF with XIC1 speed controller and SCP Starter

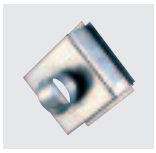
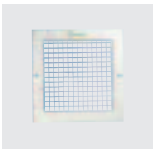
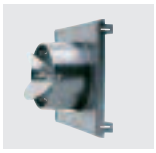


## Controllers

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| **Model** | **Inline Fan Controller XIC1** | **5 Step Transformer Speed Controller T1** | **Remote Time Controller DT20B** | **Remote Humidistat XRH** | **Passive Infrared Sensor XPIRA** |
| XCDF100 | 21858AW | 91367AA | 21850AW | 21856AW | 21871AW |
| XCDF125 | 21858AW | 91367AA | 21850AW | 21856AW | 21871AW |
| XCDF150 | 21858AW | 91367AA | 21850AW | 21856AW | 21871AW |
| XCDF200 | 21858AW | 91367AA | 21850AW | 21856AW | 21871AW |
| XCDF250 | 21858AW | 91367AA | 21850AW | 21856AW | 21871AW |
| XCDF315 | 21858AW | 91367AA | 21850AW | 21856AW | 21871AW |

## Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Inline Duct Heater IDH** | **Bag Filter Cassette CFC** | **Circular Silencer SIL** | **Flexible Connection FFC** | **Solid Duct Fastener XMK** | **Louvre Shutter XLG** |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Grille Box GB** | **Egg-Crate Ceiling Grille (Silver) CG** | **Spigot Plate/ Damper FWS** | **Four Way Ceiling Diffuser FW** | **Circular Air Valve CAV** | **Aluminium Flexible Ducting Xflex ALU** |
| 100mm | 89676AA + | 89675AA | | | 89682AA | 91435AA |
| 125mm | 89677AA + | 89675AA | | | 91490AA | 91436AA |
| 150mm | 89678AA + | 89675AA | 91430AA + | 91424AA | 89683AA | 91437AA |
| 200mm | 89679AA + | 89532AA | 91431AA + | 91424AA | | 91438AA |
| 250mm | 89680AA + | 89532AA | 91432AA + | 91425AA | | 91439AA |
| 315mm | 89681AA + | 89533AA | 91456AA + | 91426AA | | 91440AA |

# Xpelair Flex CMAX XFA

## Attenuated multi-spigot fans

NEW


### Key features

| | |
|---|---|
| Application: | **Attenuated inline** |
| Type: | **Multi-spigot** |
| Control options: | **5 step transformer speed controller** |

CE 2 Year Guarantee

### The Range

Xpelair **Flex CMAX** inline units offer a wide range of spigot options enabling ducting from multiple sources (e.g. separate toilets or offices). Cases are acoustically lined as standard making the range suitable for sensitive areas. Integral fixing points enable mounting in any attitude allowing top, bottom or front access.

EU3 low maintenance filters are fitted as standard offering protection from dust. Low noise features and high quality fans and motors ensure quiet trouble free operation and longlife. Speed selection allows simple and accurate commissioning.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel. Access from top or bottom as standard. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**MAX attenuation**
CFC and HFC-free, class 'O' open cell expanded foam, for thermal and acoustic purposes, with a maximum thermal conductivity of 0.035W/mK, fully in compliance with London Borough and CAA airport authority flammability and toxicity requirements. Adhesive is a light and ageing resistant modified acrylic synthetic resin with high temperature tolerance.

**Fans**
Single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor, external rotor type with power factors of better than 0.9. Maximum ambient operating temp. of 40°C. (Motors rated to 50ºC are available to special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Thermal contactors are incorporated into the windings to ensure overload protection. Insulation to Class B with enclosure to IP44.

**Terminal Box**
All electrical connections are wired via a IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

Electrical supply 220-240V single phase 50Hz.

**Filters**
Panel filters are EU2/3 low maintenance. Media has an extended surface area, continuous filament with F1 fire resistance to DIN 53438, dust holding capacity of 400g/m$^2$, supported by an integral wire frame. Withdrawal is via removable top or bottom access panel.

**Speed Selectors**
Motors are fully controllable using optional 5 step transformer speed controller.

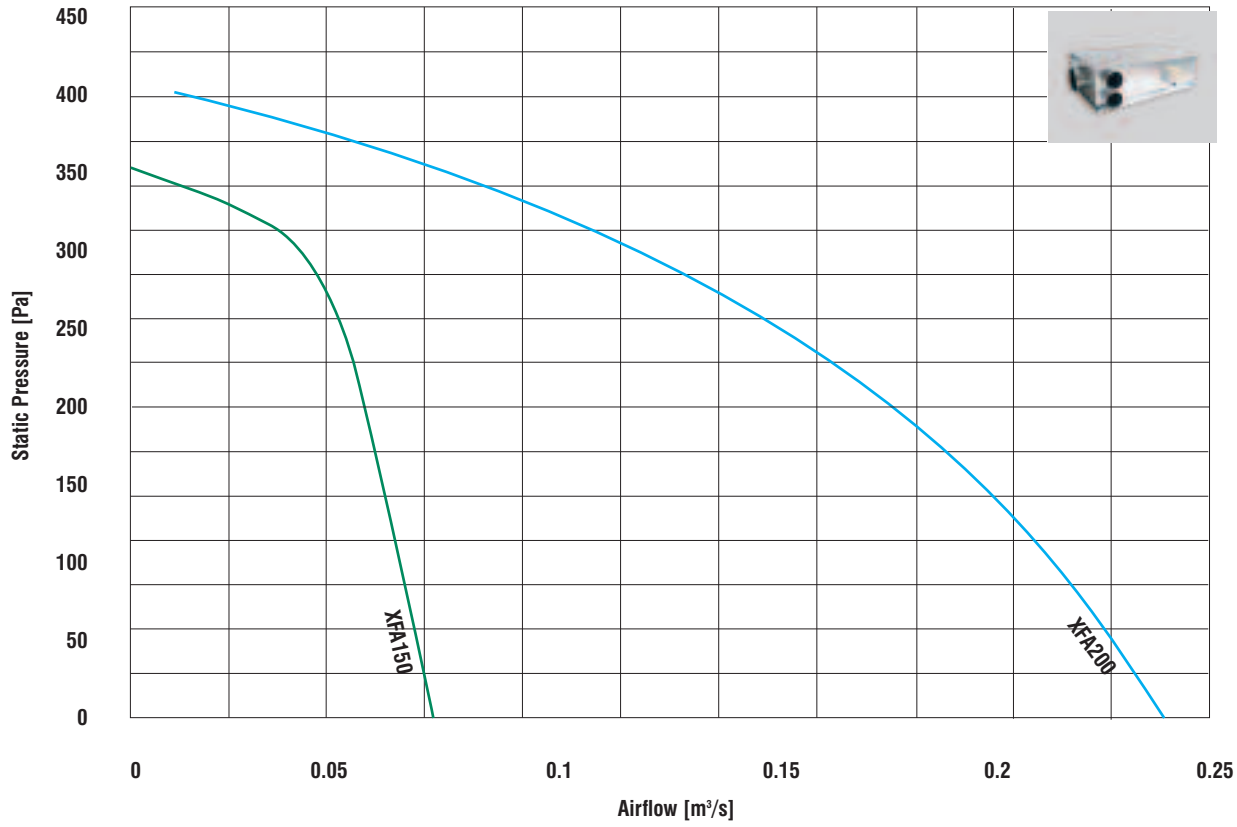
## Performance Data

| MODEL | | XFA150/150/4x100 | XFA150/4x150 | XFA150/200/2x150 | XFA200/200/4x100 | XFA200/4x150 | XFA200/200/2x150 |
|---|---|---|---|---|---|---|---|
| Reference number | | 64655AA | 64658AA | 92157AA | 64656AA | 92158AA | 64142AA |
| Number of inlet spigots | | 5 | 4 | 3 | 5 | 4 | 3 |
| Inlet spigot diameter (mm) | | 1x150 & 4x100 | 4x150 | 1x200 & 2x150 | 1x200 & 4x100 | 4x150 | 1x200 & 2x150 |
| Number of outlet spigots | | 1 | 1 | 1 | 1 | 1 | 1 |
| Outlet spigot diameter (mm) | | 150 | 150 | 150 | 200 | 200 | 200 |
| Airflow ($m^3/s$) | 0Pa | 0.070 | 0.070 | 0.070 | 0.240 | 0.240 | 0.240 |
| | 50Pa | 0.065 | 0.065 | 0.065 | 0.225 | 0.225 | 0.225 |
| | 100Pa | 0.060 | 0.060 | 0.060 | 0.210 | 0.210 | 0.210 |
| | 150Pa | 0.056 | 0.056 | 0.056 | 0.193 | 0.193 | 0.193 |
| | 200Pa | 0.050 | 0.050 | 0.050 | 0.175 | 0.175 | 0.175 |
| | 250Pa | 0.047 | 0.047 | 0.047 | 0.150 | 0.150 | 0.150 |
| | 300Pa | 0.038 | 0.038 | 0.038 | 0.118 | 0.118 | 0.118 |
| | 350Pa | | | | 0.073 | 0.073 | 0.073 |
| | 400Pa | | | | 0.010 | 0.010 | 0.010 |
| Nominal fan speed (rpm) | | 2150 | 2150 | 2150 | 1150 | 1150 | 1150 |
| Max electrical power (W) | | 88 | 88 | 88 | 195 | 195 | 195 |
| Full load current (A) | | 0.4 | 0.4 | 0.4 | 1.0 | 1.0 | 1.0 |
| Starting current (A) | | 1.0 | 1.0 | 1.0 | 3.0 | 3.0 | 3.0 |
| Motor insulation class | | B | B | B | B | B | B |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 40 | 40 | 40 |
| Weight (kg) | | 13 | 13 | 13 | 15 | 15 | 15 |

**Example of model naming:** **XFA150/150/4x100**

- XFA150 — range
- 150 — outlet spigot dia
- 4x100 — inlet spigot configuration e.g. 1 x 150mm & 4 x 100mm

## Performance Graph




## Sound Power Data

Sound power level spectra dB and free field sound levels dB(A) at 3m with spherical propagation

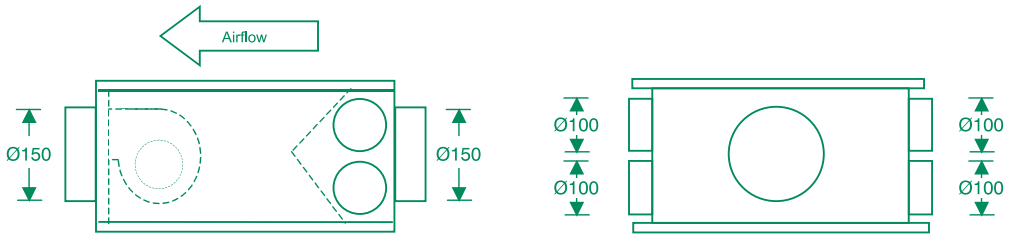
| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| XFA150 | 54 | 56 | 55 | 54 | 46 | 45 | 42 | 35 | 41 |
| XFA200 | 54 | 55 | 53 | 50 | 41 | 40 | 38 | 31 | 34 |

# Xpelair Flex CMAX XFA

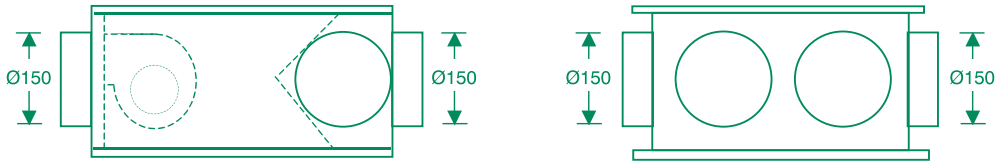
## Attenuated multi-spigot fans

### Configurations

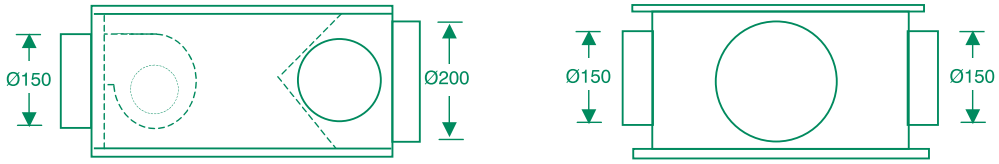
XFA150/150/4x100



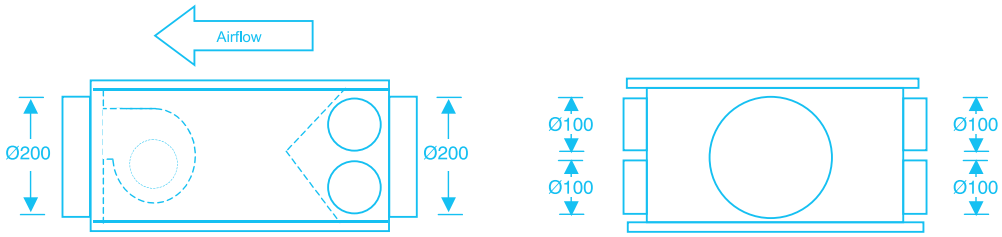

XFA150/4x150



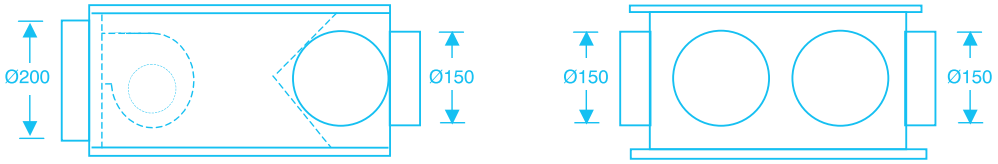

XFA150/200/2x150



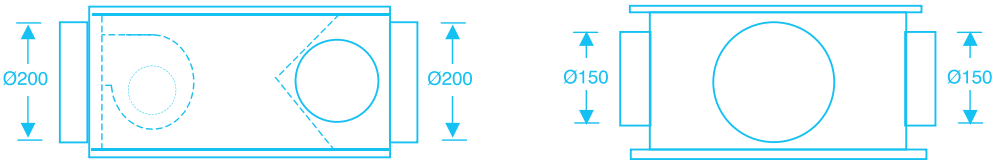

XFA200/200/4x100



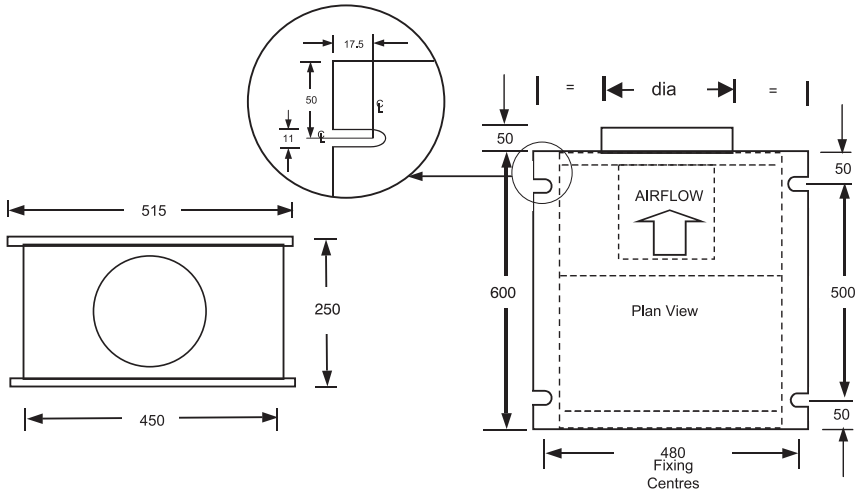

XFA200/4x150




XFA200/200/2x150



## Dimensions


17.5
50
11
515
250
450
= dia =
50
600
AIRFLOW
Plan View
50
500
50
480
Fixing
Centres

# Xpelair Flex CMAX XFA

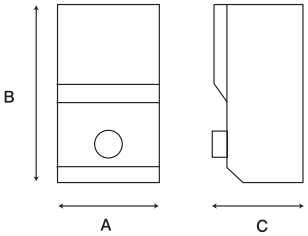
## Attenuated multi-spigot fans

### Controllers



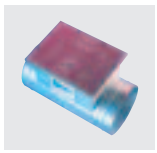
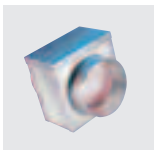
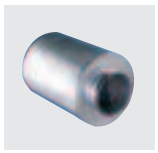
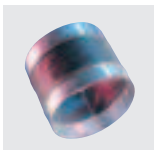
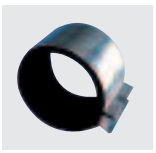
| | 5 Step Transformer Speed Controller T1 | Starter with Current Sensing Overload Protection SCP |
|---|---|---|
| XFA150 | 91367AA | 92198AA |
| XFA200 | 91367AA | 92198AA |

Dimensions of 5 Step Transformer Speed Controller

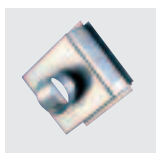
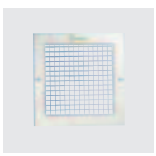
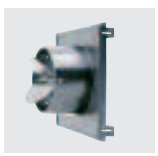



| Dimensions (mm) | | | |
|---|---|---|---|
| Model | A | B | C |
| T1 - 1.5A | 105 | 180 | 98 |
| T1 - 3.5A | 166 | 230 | 118 |
| T1 - 6A | 166 | 230 | 118 |
| T1 - 7.5A | 240 | 284 | 131 |
| T1 - 12A | 270 | 323 | 163 |

### Accessories

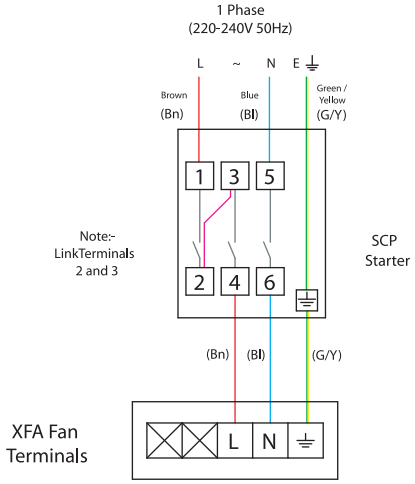

| Duct Diameter | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG |
|---|---|---|---|---|---|---|
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |

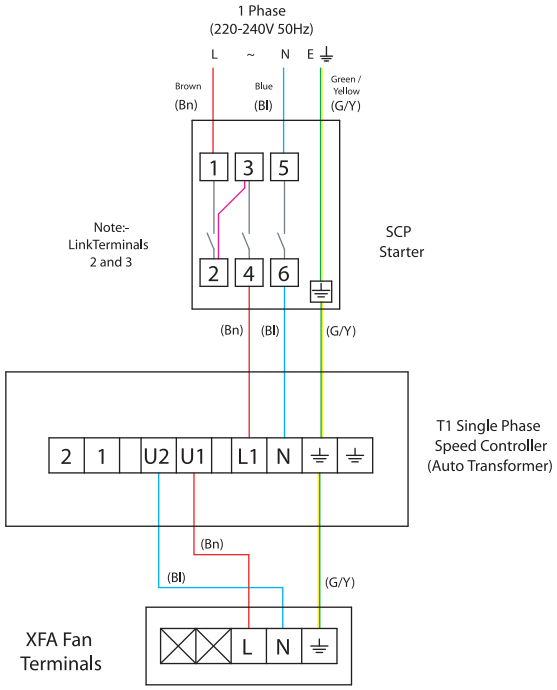

| Duct Diameter | Grille Box GB | | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | | Four Way Ceiling Diffuser FW | Circular Air Valve CAV | Aluminium Flexible Ducting Xflex ALU |
|---|---|---|---|---|---|---|---|---|
| 100mm | 89676AA | + | 89675AA | | | | 89682AA | 91435AA |
| 150mm | 89678AA | + | 89675AA | 91430AA | + | 91424AA | 89683AA | 91437AA |
| 200mm | 89679AA | + | 89532AA | 91431AA | + | 91424AA | | 91438AA |

## Wiring Diagrams

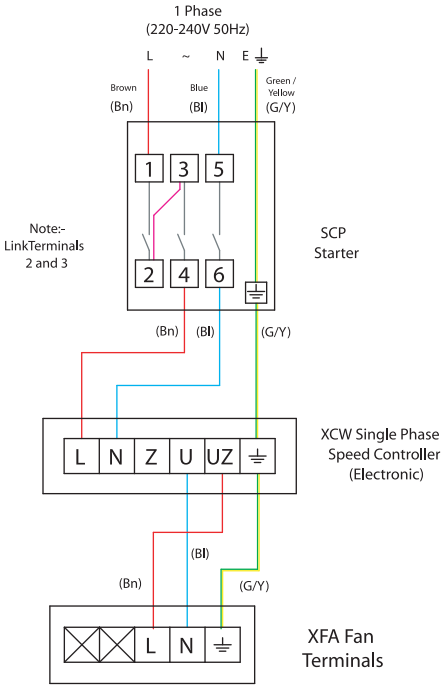
### XFA with SCP Starter with current sensing overload protection




### XFA with T1 5 step transformer speed controller and SCP Starter




### XFA with XCW electronic speed controller and SCP Starter



# Xpelair Flex CMAX Twin XFTA

## Attenuated multi-spigot fans with flow switch


### Key features

| | |
|---|---|
| Application: | **Attenuated inline** |
| Type: | **Multi-spigot twin fan** |
| Control options: | **5 step transformer speed controller, Auto changeover** |

CE 2 Year Guarantee

### The Range

Xpelair **Flex CMAX Twin** inline units offer a wide range of spigot options enabling ducting from multiple sources (e.g. separate toilets or offices). Cases are acoustically lined as standard making the range suitable for sensitive areas. Integral fixing points enable mounting in any attitude allowing top, bottom or front access.

EU3 low maintenance filters are fitted as standard offering protection from dust. Low noise features and high quality fans and motors ensure quiet trouble free operation and longlife. Speed selection allows simple and accurate commissioning.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel. Access from top as standard. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**MAX attenuation**
CFC and HFC-free, class 'O' open cell expanded foam, for thermal and acoustic purposes, with a maximum thermal conductivity of 0.035W/mK, fully in compliance with London Borough and CAA airport authority flammability and toxicity requirements. Adhesive is a light and ageing resistant modified acrylic synthetic resin with high temperature tolerance.

**Fans**
Single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls.

Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor, external rotor type with power factors of better than 0.9. Maximum ambient operating temp. of 40°C. (Motors rated to 50ºC are available to special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Thermal contactors are incorporated into the windings to ensure overload protection. Insulation to Class B with enclosure to IP44.

**Speed Selectors**
Motors are fully controllable using optional 5 step transformer speed controller.

**Terminal Box**
All electrical connections are wired via a IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

Electrical supply 220-240V single phase 50Hz.

**Filters**
Panel filters are EU2/3 low maintenance. Media has an extended surface area, continuous filament with F1 fire resistance to DIN 53438, dust holding capacity of 400g/m$^2$, supported by an integral wire frame. Withdrawal is via removable top access panel.

**Auto changeover**
Optional changeover switches are available to provide duty sharing and changeover where continuity of air movement is required.

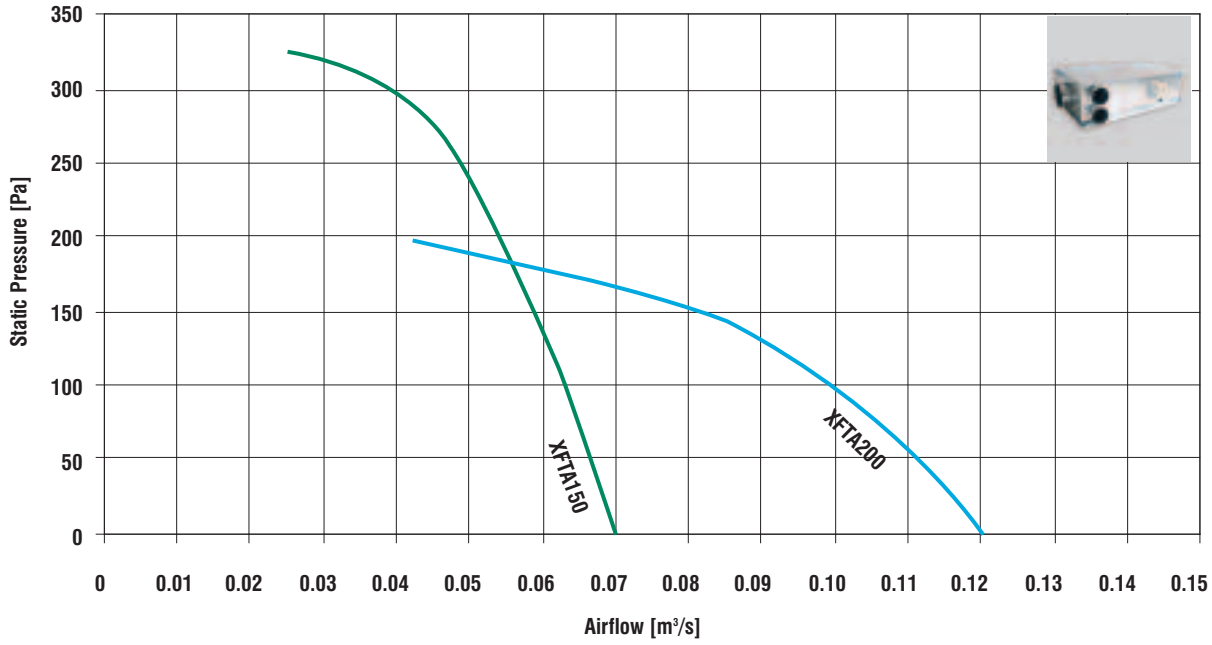
## Performance Data

| MODEL | | XFTA150/150/4x100 | XFTA150/4x150 | XFTA150/200/2x150 | XFTA200/200/4x100 | XFTA200/4x150 | XFTA200/200/2x150 |
|---|---|---|---|---|---|---|---|
| Reference number | | 64663AA | 64666AA | 92159AA | 64664AA | 92160AA | 64146AA |
| Number of inlet spigots | | 5 | 4 | 3 | 5 | 4 | 3 |
| Inlet spigot diameter (mm) | | 1x150 & 4x100 | 4x150 | 1x200 & 2x150 | 1x200 & 4x100 | 4x150 | 1x200 & 2x150 |
| Number of outlet spigots | | 1 | 2 | 1 | 1 | 2 | 1 |
| Outlet spigot diameter (mm) | | 150 | 150 | 150 | 200 | 200 | 200 |
| Airflow ($m^3/s$) | 0Pa | 0.070 | 0.070 | 0.070 | 0.120 | 0.120 | 0.120 |
| | 50Pa | 0.065 | 0.065 | 0.065 | 0.110 | 0.110 | 0.110 |
| | 100Pa | 0.060 | 0.060 | 0.060 | 0.100 | 0.100 | 0.100 |
| | 150Pa | 0.056 | 0.056 | 0.056 | 0.082 | 0.082 | 0.082 |
| | 200Pa | 0.050 | 0.050 | 0.050 | 0.043 | 0.043 | 0.043 |
| | 250Pa | 0.047 | 0.047 | 0.047 | | | |
| | 300Pa | 0.038 | 0.038 | 0.038 | | | |
| Nominal fan speed (rpm) | | 2150 | 2150 | 2150 | 1150 | 1150 | 1150 |
| Max electrical power (W) | | 88 | 88 | 88 | 195 | 195 | 195 |
| Full load current (A) | | 0.4 | 0.4 | 0.4 | 1.0 | 1.0 | 1.0 |
| Starting current (A) | | 1.0 | 1.0 | 1.0 | 3.0 | 3.0 | 3.0 |
| Motor insulation class | | B | B | B | B | B | B |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 40 | 40 | 40 |
| Weight (kg) | | 19 | 19 | 19 | 22 | 22 | 22 |

Example of model naming: **XFTA150/150/4x100**

- XFTA150 — range
- 150 — outlet spigot dia
- 4x100 — inlet spigot configuration e.g. 1 x 150mm & 4 x 100mm

## Performance Graph




## Sound Power Data

Sound power level spectra dB and free field sound levels dB(A) at 3m with spherical propagation

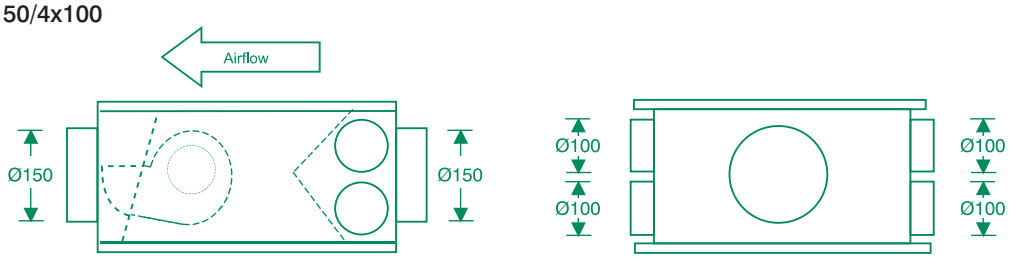
| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| XFTA150 | 54 | 56 | 55 | 54 | 46 | 45 | 42 | 35 | 28 |
| XFTA200 | 55 | 54 | 53 | 50 | 42 | 40 | 39 | 33 | 34 |

# Xpelair Flex CMAX Twin XFTA

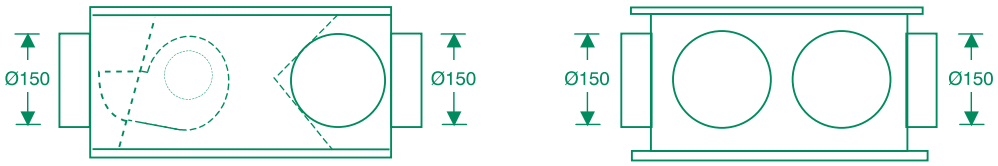
## Attenuated multi-spigot fans with flow switch

### Configurations

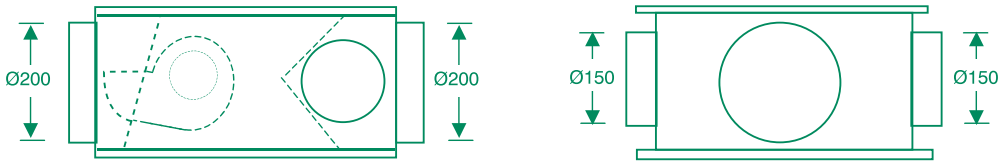
XFTA150/150/4x100



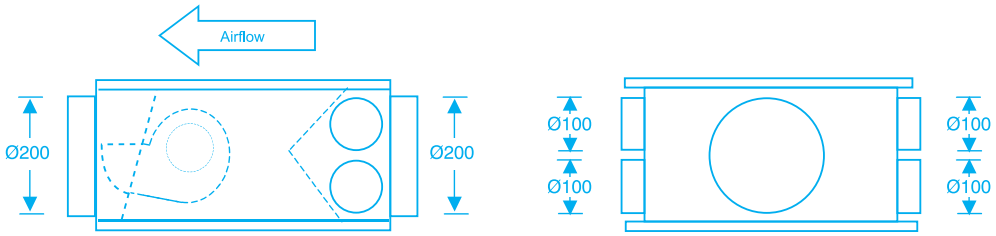

XFTA150/4x150



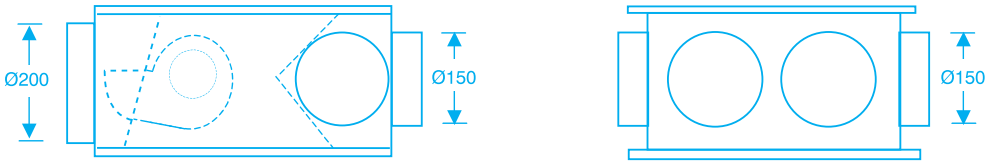

XFTA150/200/2x150



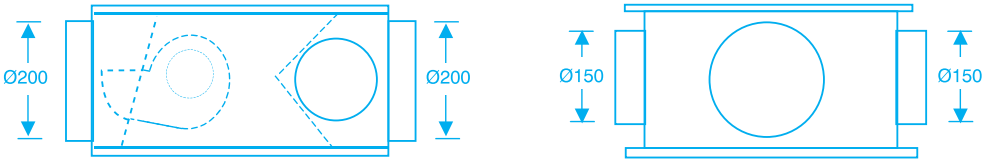

XFTA200/200/4x100



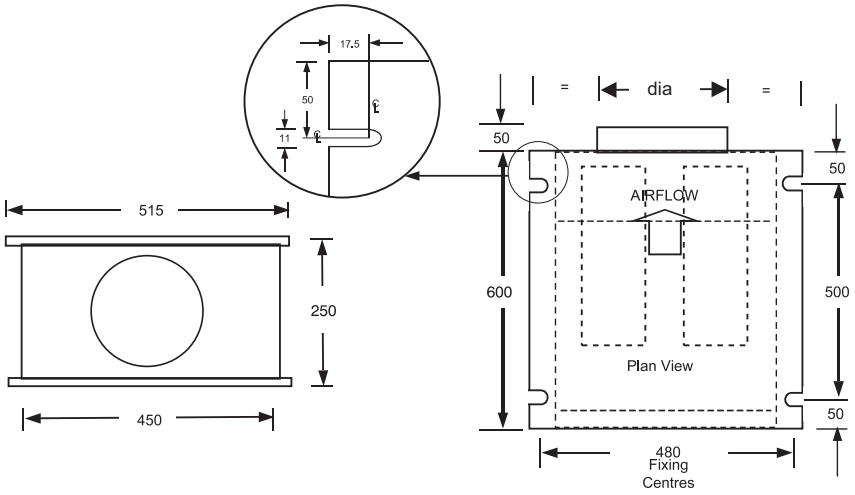

XFTA200/4x150




XFTA200/200/2x150



## Dimensions




## Controllers

### Auto Changeover Switches

**MAC-M manual duty sharing controller with auto changeover on fan failure**
Allows manual selection of the 'duty' and 'standby' fans. Automatic changeover occurs when one of the fans fails.

The changeover panel incorporates a 'power on' indicator, and 'run' and 'fail' lights indicating fan operational status.

When 'Fan 1' is manually selected, the light sequence is:

Amber power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light OFF
Fan 2 green 'run' light OFF
Fan 2 red 'fail' light OFF

When 'Fan 2' is manually selected, the 'Fan 1' green 'run' light is OFF and the 'Fan 2' green 'run' light is ON.

When the automatic changeover panel switches to 'Fan 2' due to 'Fan 1' failure, the light sequence is:

Amber power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light ON
Fan 2 green 'run' light ON
Fan 2 red 'fail' light OFF

When 'Fan 1' is operational due to 'Fan 2' failure, the 'Fan 1' red 'fail' light is OFF and the 'Fan 2' red 'fail' light is ON.

Fan 'failure' is via a very reliable airflow sensing flow switch device within the case. This gives automatic changeover and fan status indication on the control panel.

MAC-M manual duty sharing controller with auto changeover should be switched from 'Fan 1' run to 'Fan 2' run on a weekly cycle.

**MAC-A automatic duty sharing controller with auto changeover on fan failure**
Operates as MAC-M with the addition of automatic timed change of the 'duty' and 'standby' fans every 12 hours.

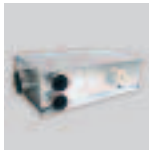
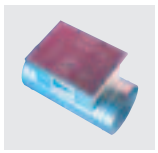
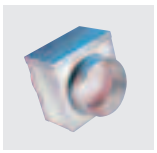
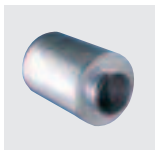
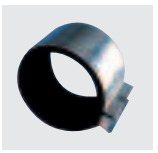
# Xpelair Flex CMAX Twin XFTA

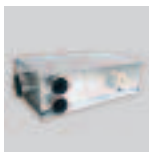
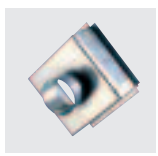
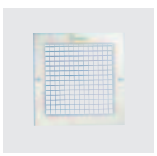
## Attenuated multi-spigot fans with flow switch

### Controllers

| |  |  |  |
|---|---|---|---|
| | 5 step Transformer Speed Controller T1 | Auto Changeover Controller with Manual Duty Share MAC-M | Auto Changeover Controller with Auto Duty Share MAC-A |
| XFTA150 | 91367AA | 64295AA | 64296AA |
| XFTA200 | 91367AA | 64295AA | 64296AA |

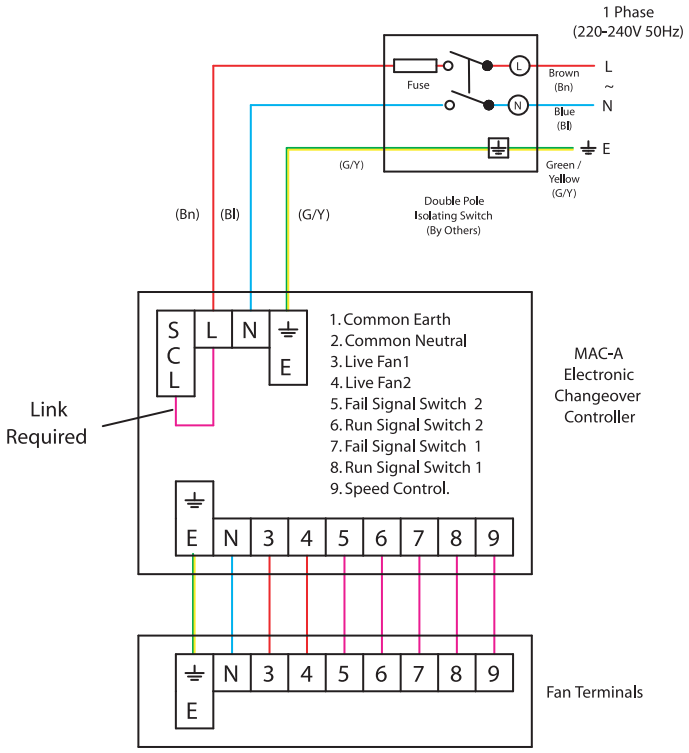
### Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG | |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA | |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA | |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA | |

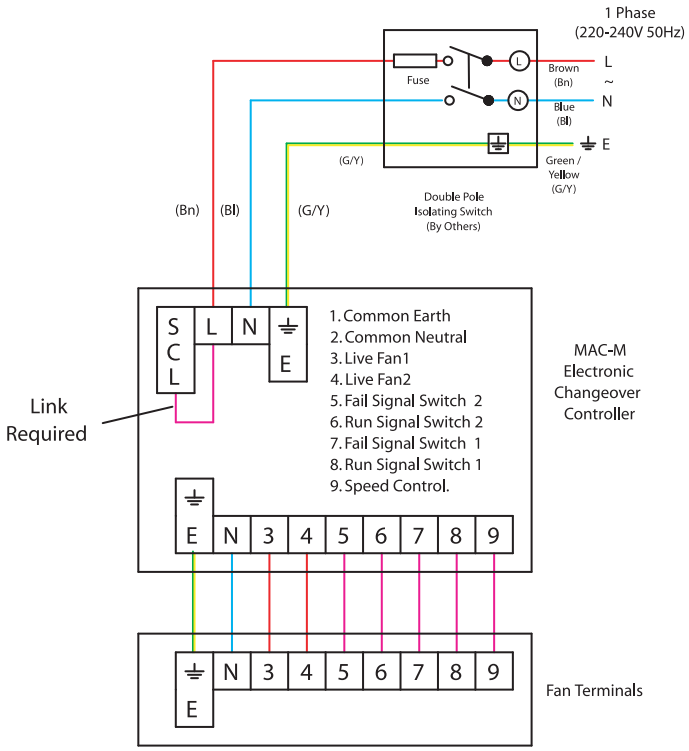
| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | Grille Box GB | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | Four Way Ceiling Diffuser FW | Circular Air Valve CAV | Aluminium Flexible Ducting Xflex ALU | |
| 100mm | 89676AA + | 89675AA | | | 89682AA | 91435AA | |
| 150mm | 89678AA + | 89675AA | 91430AA + | 91424AA | 89683AA | 91437AA | |
| 200mm | 89679AA + | 89532AA | 91431AA + | 91424AA | | 91438AA | |

## Wiring Diagrams

### XFTA with MAC-A automatic duty sharing controller




### XFTA with MAC-M manual duty sharing controller



# Xpelair Flex CMAX Twin XFDA

## Attenuated multi-spigot fans with motor sensing


### Key features

| | |
|---|---|
| Application: | **Attenuated inline** |
| Type: | **Multi-spigot twin fan** |
| Control options: | **Auto changeover** |

CE 2 Year Guarantee

### The Range

Xpelair **Flex CMAX Twin** inline units offer a wide range of spigot options enabling ducting from multiple sources (e.g. separate toilets or offices). Cases are acoustically lined as standard making the range suitable for sensitive areas. Integral fixing points enable mounting in any attitude allowing top, bottom or front access.

EU3 low maintenance filters are fitted as standard offering protection from dust. Low noise features and high quality fans and motors ensure quiet trouble free operation and longlife. Speed selection allows simple and accurate commissioning.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel. Access from top as standard. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**MAX attenuation**
CFC and HFC-free, class 'O' open cell expanded foam, for thermal and acoustic purposes, with a maximum thermal conductivity of 0.035W/mK, fully in compliance with London Borough and CAA airport authority flammability and toxicity requirements. Adhesive is a light and ageing resistant modified acrylic synthetic resin with high temperature tolerance.

**Fans**
Single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor, external rotor type with power factors of better than 0.9. Maximum ambient operating temp. of 40°C. (Motors rated to 50°C are available to special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Thermal contactors are incorporated into the windings to ensure overload protection. Insulation to Class B with enclosure to IP44.

**Terminal Box**
All electrical connections are wired via a IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

Electrical supply 220-240V single phase 50Hz.

**Filters**
Panel filters are EU2/3 low maintenance. Media has an extended surface area, continuous filament with F1 fire resistance to DIN 53438, dust holding capacity of 400g/m$^2$, supported by an integral wire frame. Withdrawal is via removable top or bottom access panel.

**Auto changeover**
Optional changeover switches are available to provide duty sharing and changeover where continuity of air movement is required. Duty sharing and changeover is operated through motor current sensing.

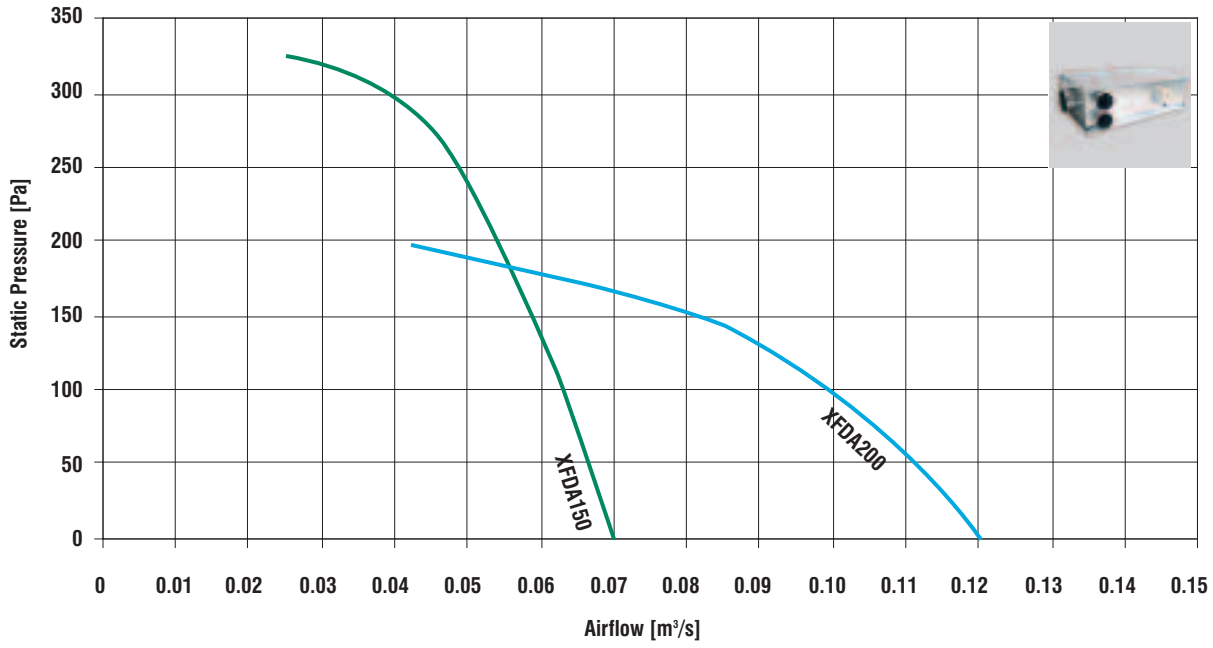
## Performance Data

| MODEL | | XFDA150/150/4x100 | XFDA150/4x150 | XFDA150/200/2x150 | XFDA200/200/4x100 | XFDA200/4x150 | XFDA200/200/2x150 |
|---|---|---|---|---|---|---|---|
| Reference number | | 92161AA | 92162AA | 92163AA | 92164AA | 92165AA | 92166AA |
| Number of inlet spigots | | 5 | 4 | 3 | 5 | 4 | 3 |
| Inlet spigot diameter (mm) | | 1x150 & 4x100 | 4x150 | 1x200 & 2x150 | 1x200 & 4x100 | 4x150 | 1x200 & 2x150 |
| Number of outlet spigots | | 1 | 2 | 1 | 1 | 2 | 1 |
| Outlet spigot diameter (mm) | | 150 | 150 | 150 | 200 | 200 | 200 |
| Airflow ($m^3/s$) | 0Pa | 0.070 | 0.070 | 0.070 | 0.120 | 0.120 | 0.120 |
| | 50Pa | 0.065 | 0.065 | 0.065 | 0.110 | 0.110 | 0.110 |
| | 100Pa | 0.060 | 0.060 | 0.060 | 0.100 | 0.100 | 0.100 |
| | 150Pa | 0.056 | 0.056 | 0.056 | 0.082 | 0.082 | 0.082 |
| | 200Pa | 0.050 | 0.050 | 0.050 | 0.043 | 0.043 | 0.043 |
| | 250Pa | 0.047 | 0.047 | 0.047 | | | |
| | 300Pa | 0.038 | 0.038 | 0.038 | | | |
| Nominal fan speed (rpm) | | 2150 | 2150 | 2150 | 1150 | 1150 | 1150 |
| Max electrical power (W) | | 88 | 88 | 88 | 195 | 195 | 195 |
| Full load current (A) | | 0.4 | 0.4 | 0.4 | 1.0 | 1.0 | 1.0 |
| Starting current (A) | | 1.0 | 1.0 | 1.0 | 3.0 | 3.0 | 3.0 |
| Motor insulation class | | B | B | B | B | B | B |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 40 | 40 | 40 |
| Weight (kg) | | 19 | 19 | 19 | 22 | 22 | 22 |

Example of model naming: **XFDA150/150/4x100**

- XFDA150 — range
- 150 — outlet spigot dia
- 4x100 — inlet spigot configuration e.g. 1 x 150mm & 4 x 100mm

## Performance Graph




## Sound Power Data

Sound power level spectra dB and free field sound levels dB(A) at 3m with spherical propagation

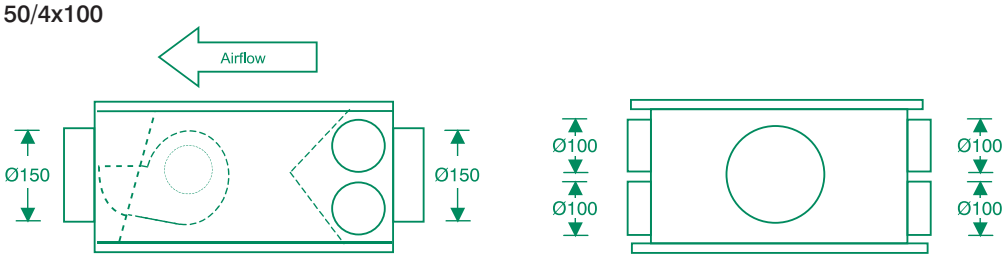
| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| XFDA150 | 54 | 56 | 55 | 54 | 46 | 45 | 42 | 35 | 28 |
| XFDA200 | 55 | 54 | 53 | 50 | 42 | 40 | 39 | 33 | 34 |

# Xpelair Flex CMAX Twin XFDA

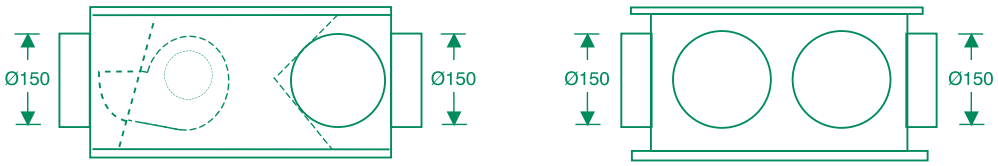
## Attenuated multi-spigot fans with motor sensing

### Configurations

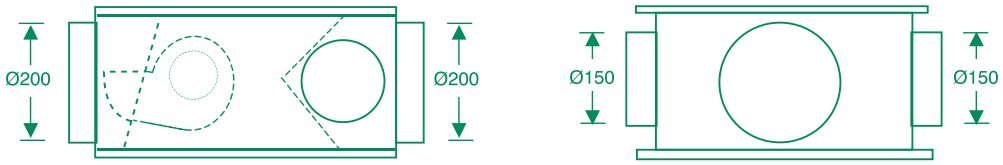
XFDA150/150/4x100



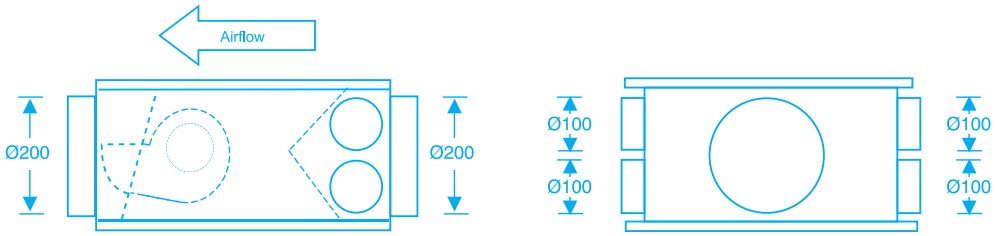

XFDA150/4x150



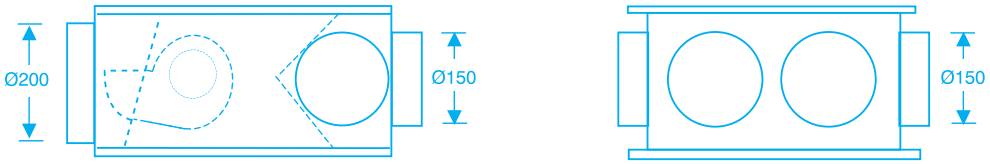

XFDA150/200/2x150



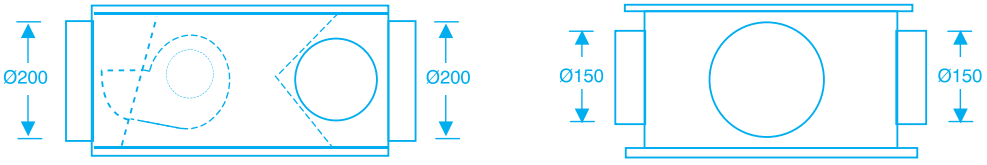

XFDA200/200/4x100



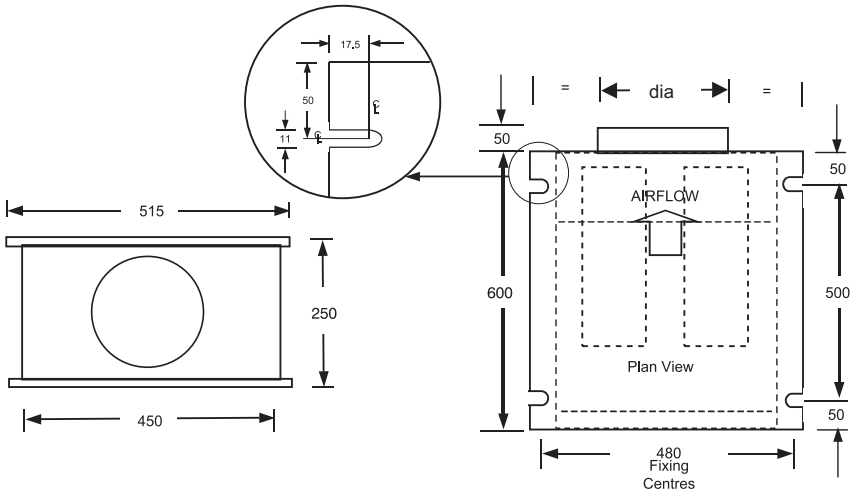

XFDA200/4x150




XFDA200/200/2x150



## Dimensions




## Controllers

### Auto Changeover Switches

**ACO-1 automatic duty sharing controller with auto changeover on fan failure**
Provides automatic timed change of the 'duty' and 'standby' fans every 12 hours. Automatic changeover also occurs when one of the fans fails.

The changeover panel incorporates a 'power on' indicator, and 'run' and 'fail' lights indicating fan operational status.

When the ACO is switched on, 'Fan 1' operates and the light sequence is:

Red power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light OFF
Fan 2 green 'run' light OFF
Fan 2 red 'fail' light OFF

When 'Fan 2' is automatically selected, the 'Fan 1' green 'run' light is OFF and the 'Fan 2' green 'run' light is ON.

When the automatic changeover panel switches to 'Fan 2' due to 'Fan 1' failure, the light sequence is:

Red power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light ON
Fan 2 green 'run' light ON
Fan 2 red 'fail' light OFF

When 'Fan 1' is operational due to 'Fan 2' failure, the 'Fan 1' red 'fail' light is OFF and the 'Fan 2' red 'fail' light is ON.

Fan 'failure' is via a very reliable airflow sensing flow switch device within the case. This gives automatic changeover and fan status indication on the control panel.

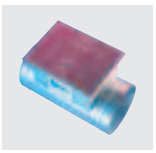
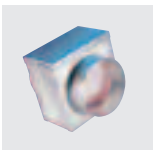
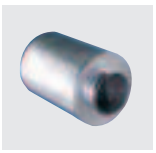
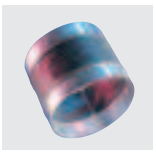
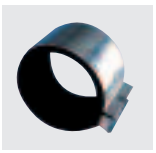
# Xpelair Flex CMAX Twin XFDA

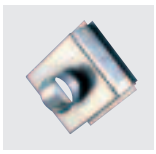
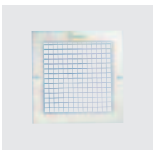
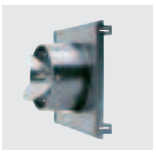
## Attenuated multi-spigot fans with motor sensing

### Controllers

| |  |  |
|---|---|---|
| | | Auto Changeover Controller with Auto Duty Share ACO-1 |
| XFDA150 | | 72774AA |
| XFDA200 | | 72774AA |

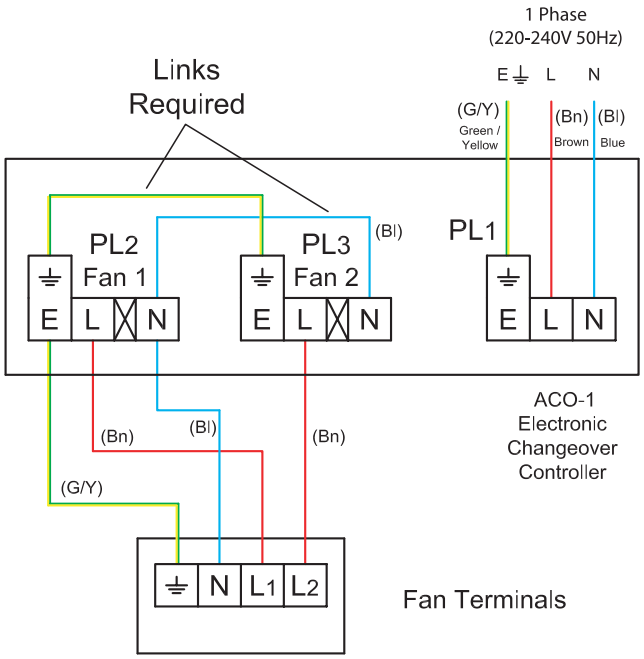
### Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG |
| 100mm | | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 150mm | | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | | Grille Box GB | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | Four Way Ceiling Diffuser FW | Circular Air Valve CAV | Aluminium Flexible Ducting Xflex ALU |
| 100mm | | 89676AA | 89675AA | | | 89682AA | 91435AA |
| 150mm | | 89678AA | 89675AA | 91430AA | 91424AA | 89683AA | 91437AA |
| 200mm | | 89679AA | 89532AA | 91431AA | 91424AA | | 91438AA |

## Wiring Diagrams

### XFDA with ACO-1 automatic duty sharing controller



# Xpelair HiFlo C XSF

## Inline single cabinet fans

NEW


### Key features

| | |
|---|---|
| Application: | **Ducted cabinet ventilation** |
| Type: | **Centrifugal** |
| Control options: | **5 step transformer speed controller** |

CE 2 Year Guarantee

### The Range

The Xpelair **HiFlo C** range of inline fans is a sixteen model line up of fans for use in ducting applications where high performance is required. Each fan combines innovative features to increase efficiency, reduce noise and make installation easier.

With models suitable for light commercial through to industrial applications such as schools, shops, sports complexes, offices, pubs and restaurants, the compact design allows the fans to be easily accommodated above a suspended ceiling or below a floor void using the mounting points provided.

All models can be mounted with the cover upwards or inverted.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**Fans**
Fans are single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls.

Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Motors are totally enclosed, high-efficiency, split-capacitor type with power factors of better than 0.9. Maximum ambient operating temp. at least 40°C. (Motors rated to 50ºC are available special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired to an IP54 external terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

**Control**
Motors are fully speed controllable using a 5 step transformer speed controller.

## Performance Data

| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XSF100** | **XSF125** | **XSF150** | **XSF200** | **XSF250** | **XSF315/1** | **XSF315/2** | **XSF400/1** | **XSF400/2** | **XSF400/3** | **XSF500/1** | **XSF500/4** |
| Reference number | | 64000AA | 64001AA | 64002AA | 64003AA | 64005AA | 64006AA | 64007AA | 64008AA | 64009AA | 64039AA | 64040AA | 64043AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow ($m^3/s$) | 0Pa | 0.070 | 0.125 | 0.190 | 0.240 | 0.540 | 0.560 | 0.700 | 0.720 | 1.050 | | 1.278 | 1.888 |
| | 50Pa | 0.065 | 0.120 | 0.185 | 0.225 | 0.510 | 0.530 | 0.680 | 0.700 | 1.020 | | 1.194 | 1.805 |
| | 100Pa | 0.060 | 0.115 | 0.180 | 0.210 | 0.460 | 0.486 | 0.660 | 0.680 | 0.986 | | 1.100 | 1.694 |
| | 150Pa | 0.056 | 0.110 | 0.170 | 0.193 | 0.400 | 0.425 | 0.640 | 0.660 | 0.950 | | 0.972 | 1.611 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.175 | 0.300 | 0.333 | 0.600 | 0.620 | 0.910 | 1.000 | 0.833 | 1.583 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.025 | 0.028 | 0.560 | 0.580 | 0.850 | 0.916 | 0.597 | 1.444 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | | | 0.515 | 0.530 | 0.798 | | | 1.236 |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.465 | 0.475 | 0.750 | 0.860 | 0.195 | |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.340 | 0.350 | 0.680 | | | 0.777 |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.165 | 0.170 | 0.580 | 0.750 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.140 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.010 | 0.402 | | |
| | 450Pa | | | | | | | | | | 0.195 | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1300 | 1300 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 16 | 16 | 17 | 18 | 36 | 36 | 38 | 44 | 49 | 58 | 80 | 89 |

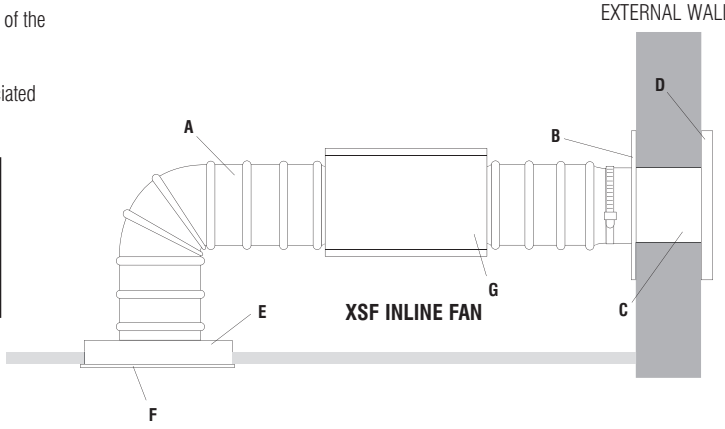
| | | Three Phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XSF500/2** | **XSF500/3** | **XSF500/5** | **XSF600** |
| Reference number | | 64041AA | 64042AA | 64044AA | 64045AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow ($m^3/s$) | 0Pa | 1.555 | | | |
| | 50Pa | 1.472 | | 1.945 | |
| | 100Pa | 1.388 | | 1.847 | |
| | 150Pa | 1.277 | | 1.740 | |
| | 200Pa | 1.170 | | 1.620 | 2.750 |
| | 250Pa | 1.000 | | 1.388 | 2.700 |
| | 300Pa | 0.777 | | 1.042 | 2.640 |
| | 350Pa | 0.111 | | 0.600 | 2.500 |
| | 400Pa | | | | 2.222 |
| | 450Pa | | 1.527 | | 1.735 |
| | 500Pa | | 1.460 | | 0.666 |
| | 550Pa | | 1.389 | | 0.125 |
| | 600Pa | | 1.277 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 80 | 80 | 82 | 138 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XSF** range of short-case axial fans.

The installation diagram shows a typical **XSF** ducted installation and associated accessories.

| | | | |
|---|---|---|---|
| **A** | Flexible ducting | **E** | Grille box |
| **B** | Spigot plate | **F** | Ceiling grille |
| **C** | Wall duct | **G** | Worm drive clip |
| **D** | External air operated louvre shutter | | |

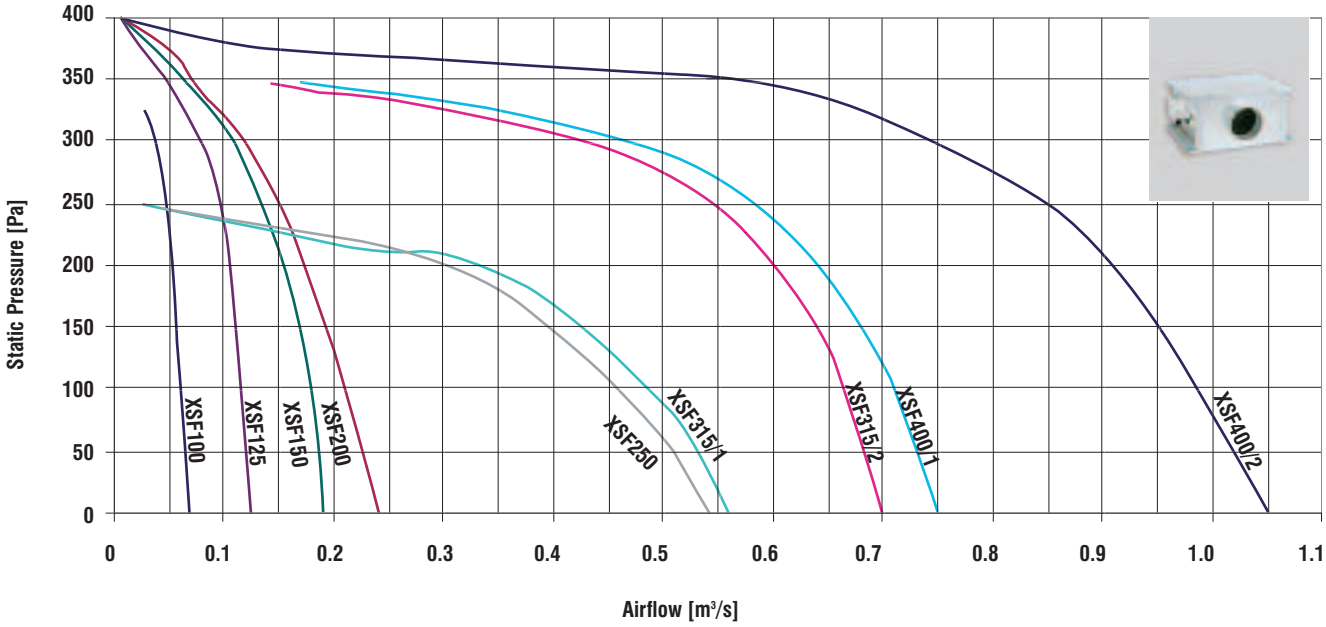


# Xpelair HiFlo C XSF

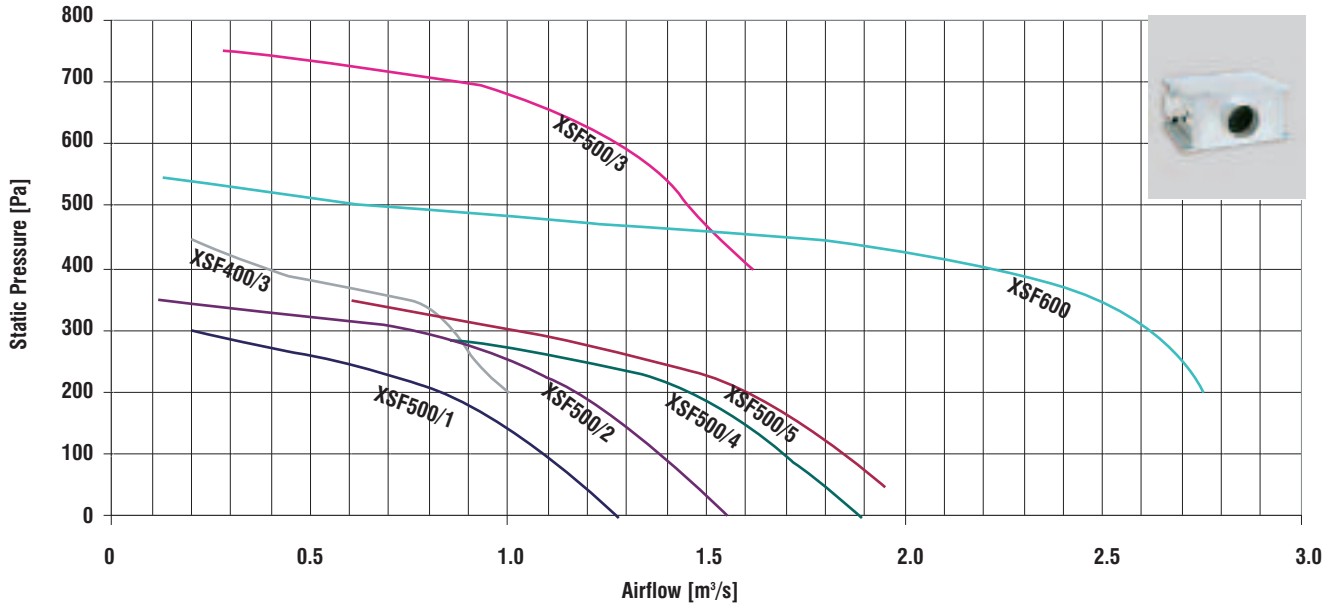
## Inline single cabinet fans

### Performance Graphs

XSF100 to XSF400/2




XSF400/3 to XSF600

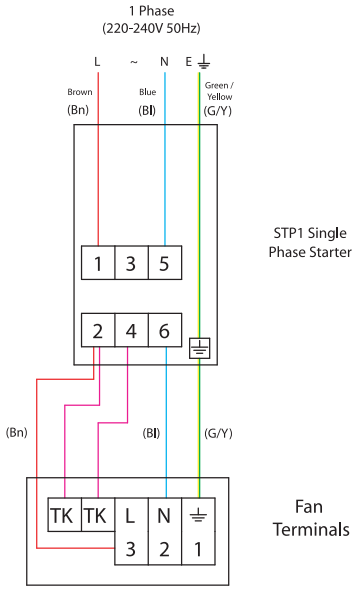



### Sound Power Data

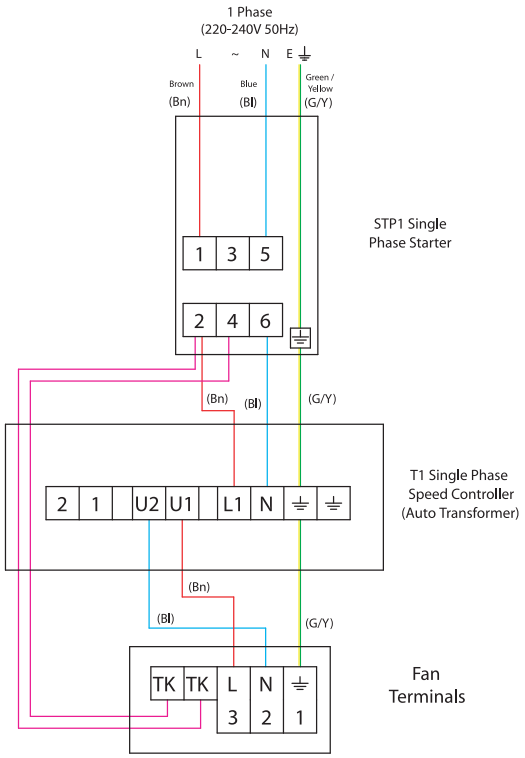
| MODEL | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| XSF100 | 56 | 58 | 57 | 57 | 52 | 53 | 50 | 43 | 43 |
| XSF125 | 51 | 54 | 52 | 49 | 43 | 44 | 42 | 35 | 34 |
| XSF150 | 53 | 55 | 53 | 51 | 45 | 46 | 44 | 37 | 35 |
| XSF200 | 56 | 57 | 55 | 53 | 47 | 48 | 46 | 39 | 36 |
| XSF250 | 61 | 62 | 60 | 59 | 52 | 53 | 51 | 43 | 42 |
| XSF315/1 | 62 | 63 | 61 | 60 | 53 | 54 | 51 | 43 | 43 |
| XSF315/2 | 65 | 64 | 65 | 67 | 65 | 66 | 63 | 58 | 44 |
| XSF400/1 | 67 | 66 | 67 | 69 | 67 | 68 | 65 | 60 | 46 |
| XSF400/2 | 72 | 71 | 71 | 73 | 71 | 72 | 70 | 65 | 53 |
| XSF400/3 | 76 | 75 | 74 | 74 | 71 | 72 | 71 | 69 | 59 |
| XSF500/1 | 74 | 73 | 72 | 72 | 69 | 70 | 69 | 67 | 57 |
| XSF500/2 | 75 | 74 | 73 | 73 | 70 | 71 | 70 | 68 | 58 |
| XSF500/3 | 82 | 81 | 80 | 80 | 77 | 78 | 77 | 75 | 65 |
| XSF500/4 | 73 | 72 | 71 | 71 | 68 | 69 | 68 | 66 | 56 |
| XSF500/5 | 74 | 73 | 72 | 72 | 69 | 70 | 69 | 67 | 57 |
| XSF600 | 80 | 79 | 78 | 78 | 75 | 76 | 75 | 73 | 63 |

## Wiring Diagrams

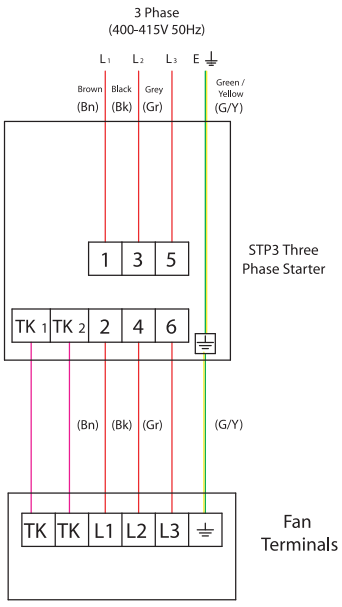
### XSF with single phase starter STP1



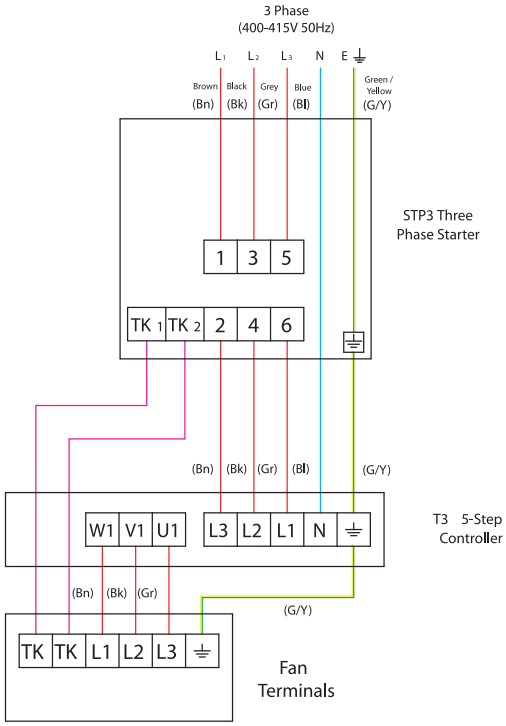

### XSF with single phase starter STP1 and 5 step transformer speed controller T1




### XSF with three phase starter STP3



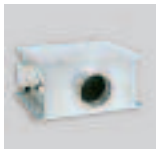

### XSF with three phase starter STP3 and 5 step transformer speed controller T3



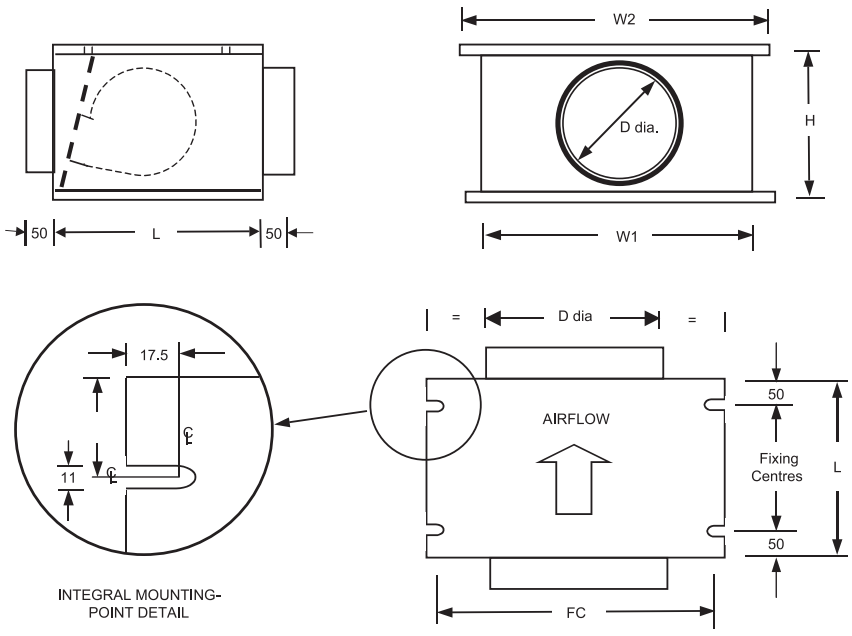
# Xpelair HiFlo C XSF

## Inline single cabinet fans

### Controllers

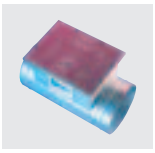
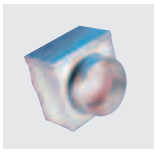
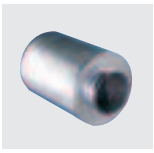
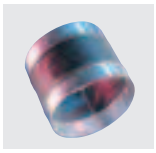
| | |  |  |  |
|---|---|---|---|---|
| | | | 5 Step Transformer Speed Controller T1/T3 | Starter with Thermal Overload Protection STP1/STP3 |
| Single Phase | XSF100 | | 91367AA | 91372AA |
| | XSF125 | | 91367AA | 91372AA |
| | XSF150 | | 91367AA | 91372AA |
| | XSF200 | | 91367AA | 91372AA |
| | XSF250 | | 91368AA | 91372AA |
| | XSF315/1 | | 91368AA | 91372AA |
| | XSF315/2 | | 91368AA | 91372AA |
| | XSF400/1 | | 91368AA | 91372AA |
| | XSF400/2 | | 91369AA | 91372AA |
| | XSF400/3 | | 91369AA | 91372AA |
| | XSF500/1 | | 91369AA | 91372AA |
| | XSF500/4 | | 91371AA | 91372AA |
| Three Phase | XSF500/2 | | 91363AA | 91373AA |
| | XSF500/3 | | 91364AA | 91373AA |
| | XSF500/5 | | 91363AA | 91373AA |
| | XSF600 | | 91365AA | 91373AA |

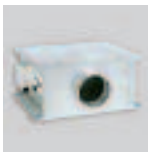
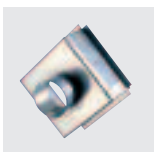
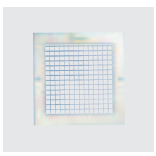
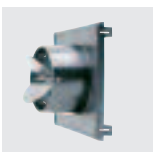
### Dimensions




| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| XSF100 | 450 | 250 | 450 | 515 | 100 | 480 |
| XSF125 | 450 | 250 | 450 | 515 | 125 | 480 |
| XSF150 | 450 | 250 | 450 | 515 | 150 | 480 |
| XSF200 | 450 | 250 | 450 | 515 | 200 | 480 |
| XSF250 | 600 | 450 | 850 | 915 | 250 | 880 |
| XSF315/1 | 600 | 450 | 850 | 915 | 315 | 880 |
| XSF315/2 | 600 | 450 | 850 | 915 | 315 | 880 |
| XSF400/1 | 600 | 450 | 850 | 915 | 400 | 880 |
| XSF400/2 | 600 | 450 | 850 | 915 | 400 | 880 |
| XSF400/3 | 600 | 500 | 850 | 915 | 400 | 880 |
| XSF500/1 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSF500/2 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSF500/3 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSF500/4 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSF500/5 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSF600 | 900 | 750 | 1250 | 1315 | 600 | 1280 |

## Accessories

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| **Duct Diameter** | **Inline Duct Heater IDH** | **Bag Filter Cassette CFC** | **Circular Silencer SIL** | **Flexible Connection FFC** | **Solid Duct Fastener XMK** | **Louvre Shutter XLG** |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | 92248AA | | | 91970AA | |
| 600mm | | | | | 91971AA | |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Grille Box GB** | **Egg-Crate Ceiling Grille (Silver) CG** | **Spigot Plate/ Damper FWS** | **Four Way Ceiling Diffuser FW** | **Circular Air Valve CAV** | **Aluminium Flexible Ducting Xflex ALU** |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | | 91430AA + 91424AA | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | | 91431AA + 91424AA | | | 91438AA |
| 250mm | 89680AA + 89532AA | | 91432AA + 91425AA | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | | 91440AA |
| 400mm | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |

# Xpelair HiFlo CMAX XSFA

## Attenuated inline single cabinet fans


### Key features

| | |
|---|---|
| Type: | **Ducted cabinet ventilation** |
| Application: | **Commercial / Industrial** |
| Control options: | **5 step transformer speed controller** |

CE 2 Year Guarantee

### The Range

The Xpelair **HiFlo CMAX** range of attenuated inline fans is a sixteen model line up of fans for use in ducting applications where high performance is required. Each fan combines innovative features to increase efficiency, reduce noise and make installation easier.

With models suitable for light commercial through to industrial applications such as schools, shops, sports complexes, offices, pubs and restaurants, the compact design allows the fans to be easily accommodated above a suspended ceiling or below a floor void using the mounting points provided.

All models can be mounted with the cover upwards or inverted.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**MAX attenuation**
CFC and HFC-free, class 'O' open cell expanded foam, for thermal and acoustic purposes, with a maximum thermal conductivity of 0.035W/mK, fully in compliance with London Borough and CCA airport authority flammability and toxicity requirements.

Adhesive is a light and ageing resistant modified acrylic synthetic resin with high temperature tolerance.

**Fans**
Fans are single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Motors are totally enclosed, high-efficiency, split-capacitor type with power factors of better than 0.9. Maximum ambient operating temp. at least 40°C. (Motors rated to 50ºC are available special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired to an IP54 external terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

**Control**
Motors are fully speed controllable using a 5 step transformer speed controller.

## Performance Data

| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XSFA100** | **XSFA125** | **XSFA150** | **XSFA200** | **XSFA250** | **XSFA315/1** | **XSFA315/2** | **XSFA400/1** | **XSFA400/2** | **XSFA400/3** | **XSFA500/1** | **XSFA500/4** |
| Reference number | | 91389AA | 91390AA | 91391AA | 91392AA | 91393AA | 91394AA | 91395AA | 91396AA | 91397AA | 64046AA | 64047AA | 64050AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow ($m^3/s$) | 0Pa | 0.070 | 0.125 | 0.190 | 0.240 | 0.540 | 0.560 | 0.700 | 0.720 | 1.050 | | 1.278 | 1.888 |
| | 50Pa | 0.065 | 0.120 | 0.185 | 0.225 | 0.510 | 0.530 | 0.680 | 0.700 | 1.020 | | 1.194 | 1.805 |
| | 100Pa | 0.060 | 0.115 | 0.180 | 0.210 | 0.460 | 0.486 | 0.660 | 0.680 | 0.986 | | 1.100 | 1.694 |
| | 150Pa | 0.056 | 0.110 | 0.170 | 0.193 | 0.400 | 0.425 | 0.640 | 0.660 | 0.950 | | 0.972 | 1.611 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.175 | 0.300 | 0.333 | 0.600 | 0.620 | 0.910 | 1.000 | 0.833 | 1.583 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.025 | 0.028 | 0.560 | 0.580 | 0.850 | 0.916 | 0.597 | 1.444 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | | | 0.515 | 0.530 | 0.798 | | | 1.236 |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.465 | 0.475 | 0.750 | 0.860 | 0.195 | |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.340 | 0.350 | 0.680 | | | 0.777 |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.165 | 0.170 | 0.580 | 0.750 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.140 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.010 | 0.402 | | |
| | 450Pa | | | | | | | | | | 0.195 | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1300 | 1300 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 16 | 16 | 17 | 18 | 36 | 36 | 38 | 44 | 49 | 58 | 80 | 89 |

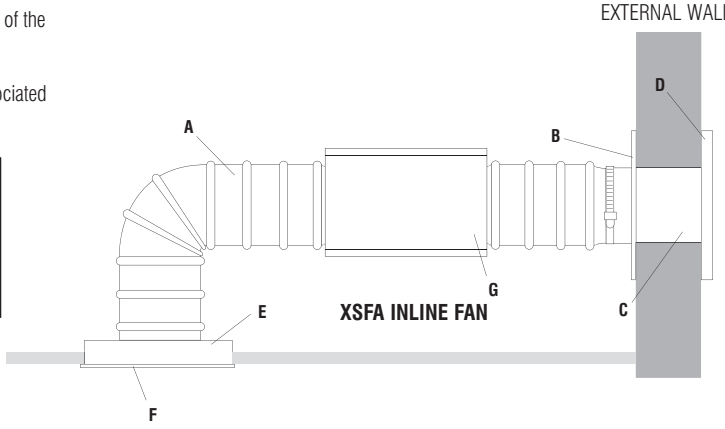
| | | Three Phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XSFA500/2** | **XSFA500/3** | **XSFA500/5** | **XSFA600** |
| Reference number | | 64048AA | 64049AA | 64051AA | 64052AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow ($m^3/s$) | 0Pa | 1.555 | | | |
| | 50Pa | 1.472 | | 1.945 | |
| | 100Pa | 1.388 | | 1.847 | |
| | 150Pa | 1.277 | | 1.740 | |
| | 200Pa | 1.170 | | 1.620 | 2.750 |
| | 250Pa | 1.000 | | 1.388 | 2.700 |
| | 300Pa | 0.777 | | 1.042 | 2.640 |
| | 350Pa | 0.111 | | 0.600 | 2.500 |
| | 400Pa | | | | 2.222 |
| | 450Pa | | 1.527 | | 1.735 |
| | 500Pa | | 1.460 | | 0.666 |
| | 550Pa | | 1.389 | | 0.125 |
| | 600Pa | | 1.277 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 80 | 80 | 82 | 138 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XSFA** range of short-case axial fans.

The installation diagram shows a typical **XSFA** ducted installation and associated accessories.

| | | | |
|---|---|---|---|
| **A** | Flexible ducting | **E** | Grille box |
| **B** | Spigot plate | **F** | Ceiling grille |
| **C** | Wall duct | **G** | Worm drive clip |
| **D** | External air operated louvre shutter | | |

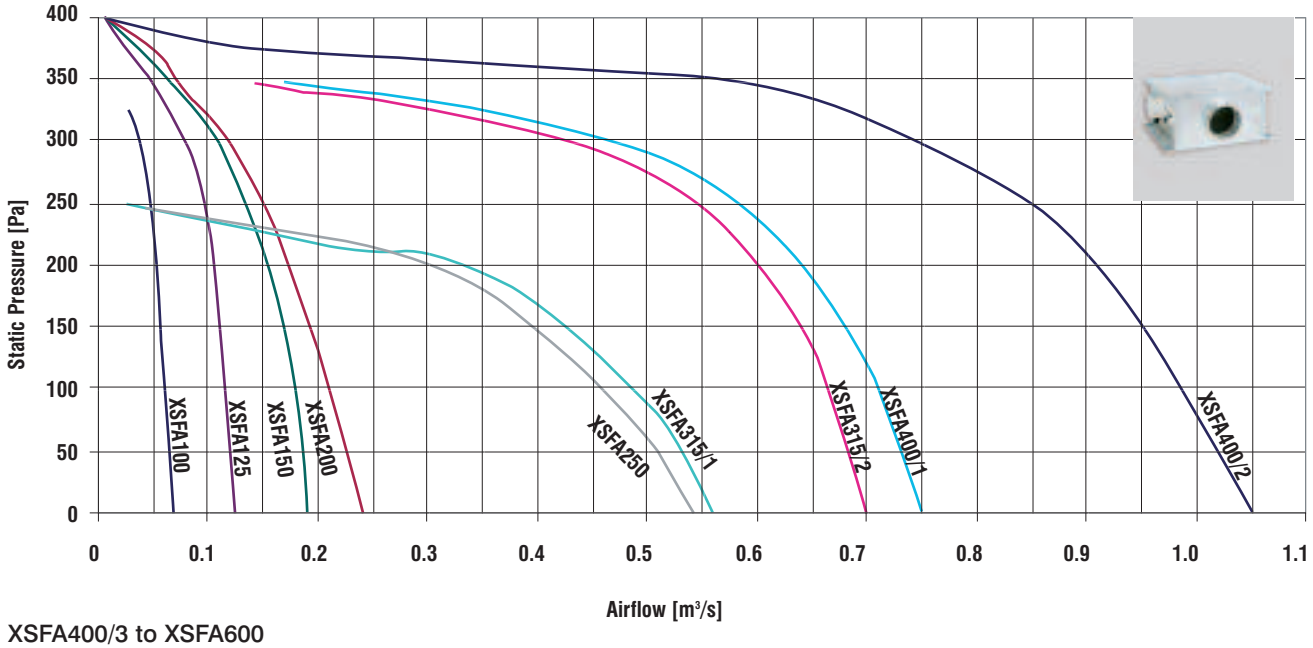


# Xpelair HiFlo CMAX XSFA

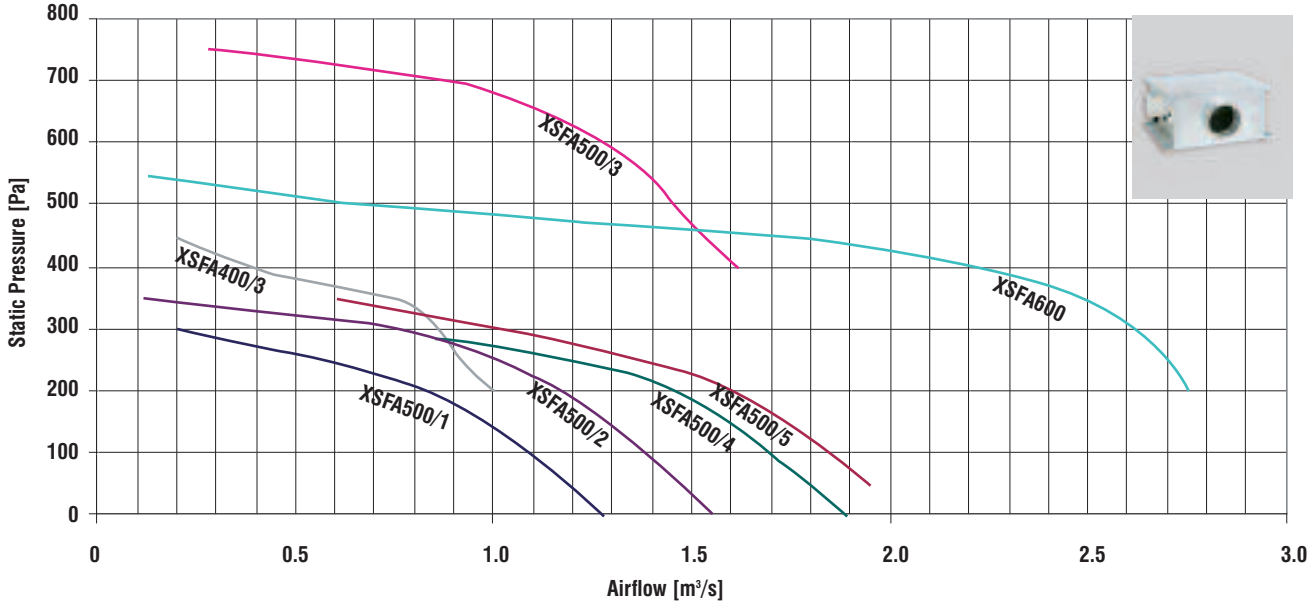
## Attenuated inline single cabinet fans

### Performance Graphs

XSFA100 to XSFA400/2




XSFA400/3 to XSFA600

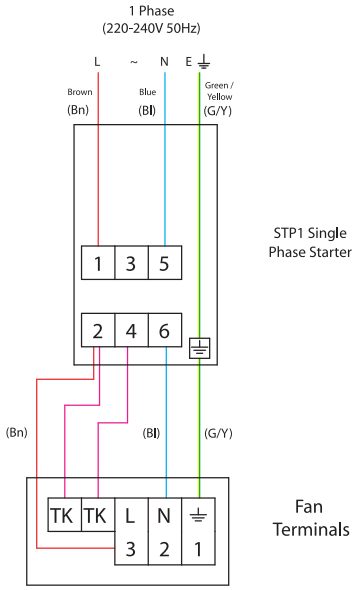



### Sound Power Data

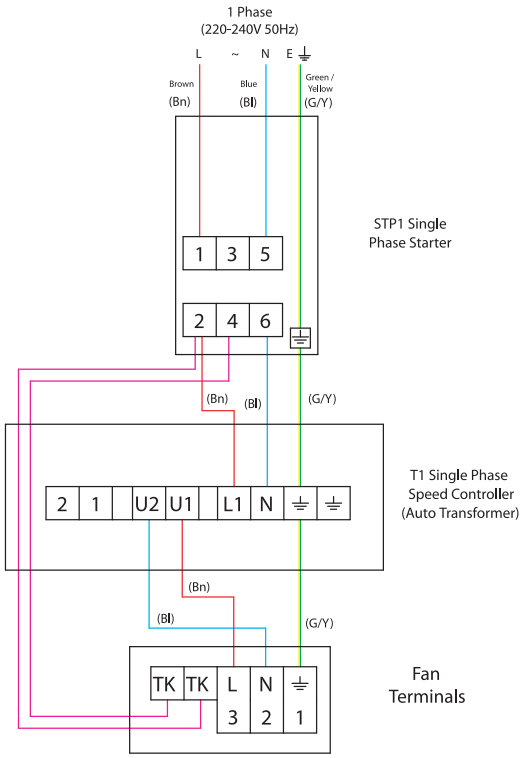
| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| **XSFA100** | 54 | 56 | 55 | 54 | 46 | 45 | 42 | 35 | 41 |
| **XSFA125** | 49 | 52 | 50 | 46 | 37 | 36 | 34 | 27 | 32 |
| **XSFA150** | 51 | 53 | 51 | 48 | 39 | 38 | 36 | 29 | 33 |
| **XSFA200** | 54 | 55 | 53 | 50 | 41 | 40 | 38 | 31 | 34 |
| **XSFA250** | 59 | 60 | 58 | 56 | 46 | 45 | 43 | 35 | 40 |
| **XSFA315/1** | 60 | 61 | 59 | 57 | 47 | 46 | 43 | 35 | 41 |
| **XSFA315/2** | 63 | 62 | 63 | 64 | 59 | 58 | 55 | 50 | 42 |
| **XSFA400/1** | 65 | 64 | 65 | 66 | 61 | 60 | 57 | 52 | 44 |
| **XSFA400/2** | 70 | 69 | 69 | 70 | 65 | 64 | 62 | 57 | 51 |
| **XSFA400/3** | 74 | 73 | 72 | 71 | 65 | 64 | 63 | 61 | 57 |
| **XSFA500/1** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XSFA500/2** | 73 | 72 | 71 | 70 | 64 | 63 | 62 | 60 | 56 |
| **XSFA500/3** | 80 | 79 | 78 | 77 | 71 | 70 | 69 | 67 | 63 |
| **XSFA500/4** | 71 | 70 | 69 | 68 | 62 | 61 | 60 | 58 | 54 |
| **XSFA500/5** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XSFA600** | 78 | 77 | 76 | 75 | 69 | 68 | 67 | 65 | 61 |

## Wiring Diagrams

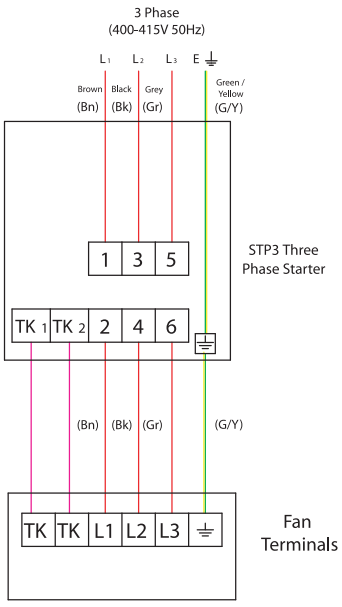
### XSFA with single phase starter STP1



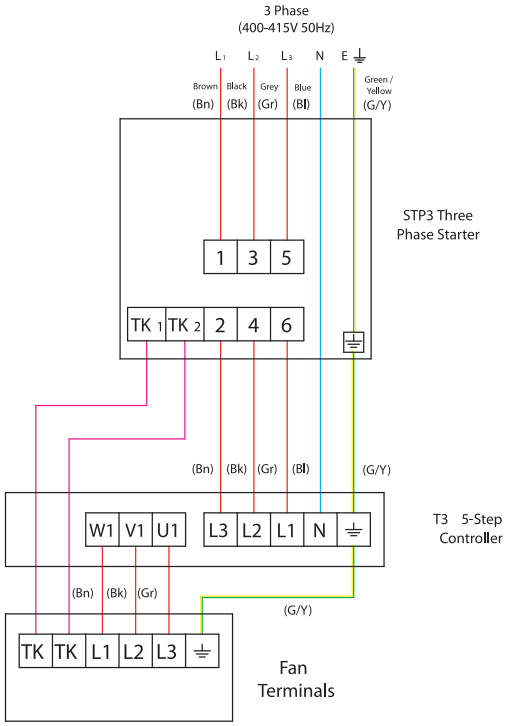

### XSFA with single phase starter STP1 and 5 step transformer speed controller T1




### XSFA with three phase starter STP3



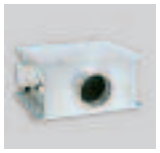

### XSFA with three phase starter STP3 and 5 step transformer speed controller T3



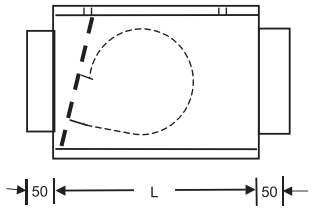
# Xpelair HiFlo CMAX XSFA

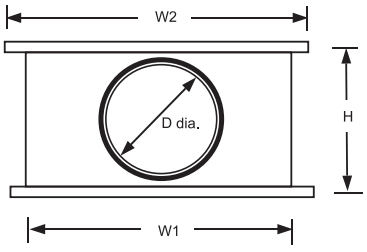
## Attenuated inline single cabinet fans

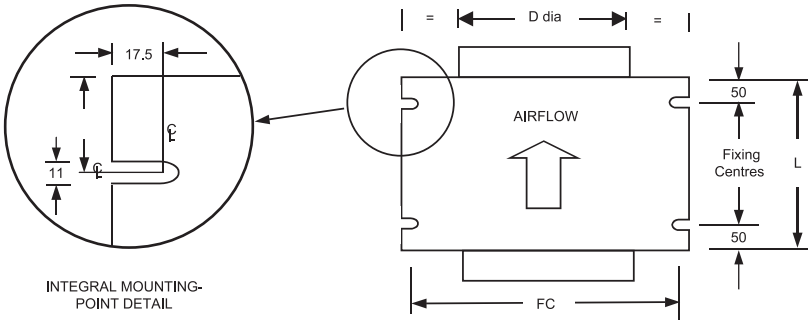
### Controllers

| | |  |  |  |
|---|---|---|---|---|
| | | | 5 Step Transformer Speed Controller T1/T3 | Starter with Thermal Overload Protection STP1/STP3 |
| Single Phase | XSFA100 | | 91367AA | 91372AA |
| | XSFA125 | | 91367AA | 91372AA |
| | XSFA150 | | 91367AA | 91372AA |
| | XSFA200 | | 91367AA | 91372AA |
| | XSFA250 | | 91368AA | 91372AA |
| | XSFA315/1 | | 91368AA | 91372AA |
| | XSFA315/2 | | 91368AA | 91372AA |
| | XSFA400/1 | | 91368AA | 91372AA |
| | XSFA400/2 | | 91369AA | 91372AA |
| | XSFA400/3 | | 91369AA | 91372AA |
| | XSFA500/1 | | 91369AA | 91372AA |
| | XSFA500/4 | | 91371AA | 91372AA |
| Three Phase | XSFA500/2 | | 91363AA | 91373AA |
| | XSFA500/3 | | 91364AA | 91373AA |
| | XSFA500/5 | | 91363AA | 91373AA |
| | XSFA600 | | 91365AA | 91373AA |

### Dimensions

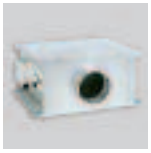
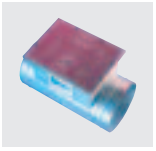
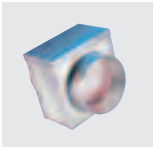
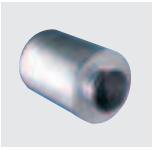
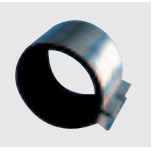


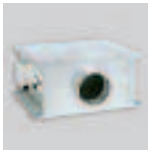
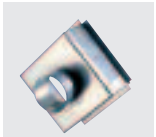
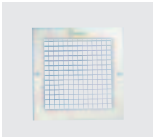
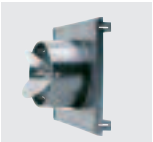




| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| XSFA100 | 450 | 250 | 450 | 515 | 100 | 480 |
| XSFA125 | 450 | 250 | 450 | 515 | 125 | 480 |
| XSFA150 | 450 | 250 | 450 | 515 | 150 | 480 |
| XSFA200 | 450 | 250 | 450 | 515 | 200 | 480 |
| XSFA250 | 600 | 450 | 850 | 915 | 250 | 880 |
| XSFA315/1 | 600 | 450 | 850 | 915 | 315 | 880 |
| XSFA315/2 | 600 | 450 | 850 | 915 | 315 | 880 |
| XSFA400/1 | 600 | 450 | 850 | 915 | 400 | 880 |
| XSFA400/2 | 600 | 450 | 850 | 915 | 400 | 880 |
| XSFA400/3 | 600 | 500 | 850 | 915 | 400 | 880 |
| XSFA500/1 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSFA500/2 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSFA500/3 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSFA500/4 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSFA500/5 | 750 | 600 | 850 | 915 | 500 | 880 |
| XSFA600 | 900 | 750 | 1250 | 1315 | 600 | 1280 |

## Controllers and Accessories

|  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Duct Diameter | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | 92248AA | | | 91970AA | |
| 600mm | | | | | 91971AA | |

|  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| Duct Diameter | Grille Box GB | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | Four Way Ceiling Diffuser FW | Circular Air Valve CAV | Aluminium Flexible Ducting Xflex ALU |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | | 91430AA + 91424AA | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | | 91431AA + 91424AA | | | 91438AA |
| 250mm | 89680AA + 89532AA | | 91432AA + 91425AA | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | | 91440AA |
| 400mm | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |

# Xpelair CubeX CMAX CBXC

## Versatile attenuated inline fans

NEW


### Key features

| | |
|---|---|
| Application: | **Attenuated inline** |
| Type: | **Versatile spigot positions** |
| Control options: | **5 step transformer speed controller** |

CE 2 Year Guarantee

Backward curved impeller

### The Range

Where higher general ventilation duties are required the new Xpelair **CubeX** range provides a flexible solution designed with a choice of duct sizes.

Installed in offices, commercial buildings, public areas, the leisure industry and industrial applications.

Xpelair **CubeX** models combine high performance backward curved inline fans with sound attenuation and robust steel housings.

The easily interchangeable blanking and spigoted outlet panels offer a choice of inline installation or left or right hand outlet providing complete on-site design flexibility including installation in the corner of a room.

Each fixed panel with its captive insulation and integral air seal is held in place by screws which can be removed in seconds.

Each model is available with a choice of two spigot sizes to suit duct design.

The range is available in four sizes with a choice of two spigot sizes for each ranging from 315mm to 450mm.

A full range of Xpelair ventilation accessories is available.

### Specification

**Casings**
Unit casing is constructed from galvanised sheet metal using a framed construction method fitted with interchangeable panels. The casing is double skin with the addition of 40mm of sound attenuating insulation. Available with a choice of four spigot sizes for adaption to site ductwork. Condensation drain included.

**Fans**
Fan are high efficiency backward curved impeller with matched external rotor. Single inlet impeller made of galvanised sheet steel balanced in two planes in accordance with G6.3 DIN ISO 1940.

**Motors**
The motor is fitted with maintenance free, sealed for life bearings and fitted with thermal overload protection to the terminal block with full motor protection through an external tripping device. Insulation is to Class 'F' with enclosure to IP55 (CBXC355 to IP54).

**Terminal Box**
Full motor protection through external tripping device and internally connected capacitor are wired to a junction box inside the unit.

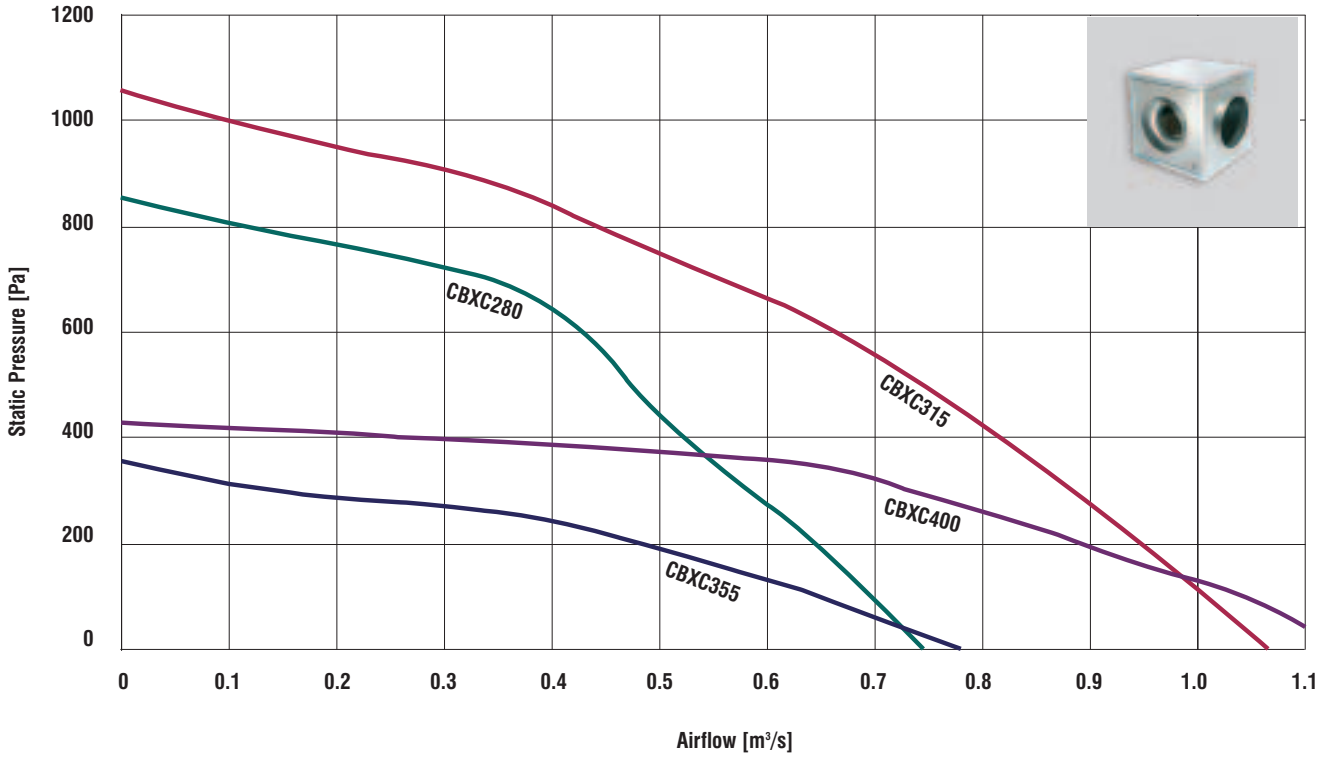
Electrical supply 220-240V single phase 50Hz.

**Controllers**
The unit is fully voltage speed controllable using a 5 step transformer speed controller. A starter with thermal overload protection is available.

## Performance Data

| MODEL | | CBXC280S315 | CBXC280S355 | CBXC315S315 | CBXC315S355 | CBXC355S315 | CBXC355S355 | CBXC400S400 | CBXC400S450 |
|---|---|---|---|---|---|---|---|---|---|
| Reference number | | 91508AA | 91509AA | 91510AA | 91512AA | 91513AA | 91514AA | 91515AA | 91516AA |
| Spigot size (mm) | | 315 | 355 | 315 | 355 | 315 | 355 | 400 | 450 |
| Airflow ($m^3/s$) | 0Pa | 0.75 | 0.75 | 1.06 | 1.06 | 0.78 | 0.78 | 1.11 | 1.11 |
| | 100Pa | 0.70 | 0.70 | 1.01 | 1.01 | 0.65 | 0.65 | 1.00 | 1.00 |
| | 200Pa | 0.65 | 0.65 | 0.95 | 0.95 | 0.49 | 0.49 | 0.86 | 0.86 |
| | 300Pa | 0.59 | 0.59 | 0.88 | 0.88 | 0.21 | 0.21 | 0.73 | 0.73 |
| | 400Pa | 0.53 | 0.53 | 0.82 | 0.82 | | | 0.50 | 0.50 |
| | 500Pa | 0.48 | 0.48 | 0.74 | 0.74 | | | | |
| | 600Pa | 0.43 | 0.43 | 0.66 | 0.66 | | | | |
| | 700Pa | 0.34 | 0.34 | 0.55 | 0.55 | | | | |
| | 800Pa | 0.11 | 0.11 | 0.45 | 0.45 | | | | |
| | 900Pa | | | 0.32 | 0.32 | | | | |
| | 1000Pa | | | 0.13 | 0.13 | | | | |
| Nominal fan speed (rpm) | | 2750 | 2750 | 2750 | 2750 | 1305 | 1305 | 1370 | 1370 |
| Motor electrical power (W) | | 760 | 760 | 960 | 960 | 315 | 315 | 595 | 595 |
| Full load current (A) | | 3.9 | 3.9 | 4.5 | 4.5 | 1.6 | 1.6 | 3.5 | 3.5 |
| Starting current (A) | | 4.7 | 4.7 | 5.3 | 5.3 | 1.7 | 1.7 | 3.5 | 3.5 |
| Motor insulation class | | F | F | F | F | F | F | F | F |
| IP rating | | IP55 | IP55 | IP55 | IP55 | IP54 | IP54 | IP55 | IP55 |
| Max operating temperature (°C) | | 50 | 50 | 60 | 60 | 50 | 50 | 50 | 50 |
| Weight (kg) | | 37 | 37 | 37 | 37 | 29 | 29 | 55 | 55 |

## Performance Graph



# Xpelair CubeX CMAX CBXC

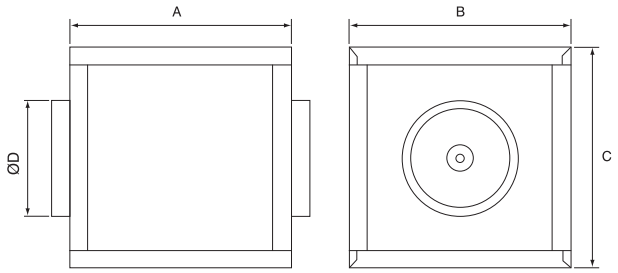
## Versatile attenuated inline fans

### Sound Power Data

Sound power level spectra dB and free field sound levels dB(A) at 3m with spherical propagation. Measured at 0Pa static pressure

| MODEL | | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| CBXC280 | inlet | 59 | 70 | 74 | 71 | 71 | 73 | 64 | 79 |
| | outlet | 60 | 67 | 78 | 79 | 80 | 74 | 66 | 84 |
| CBXC315 | inlet | 59 | 80 | 76 | 72 | 72 | 72 | 64 | 83 |
| | outlet | 60 | 77 | 77 | 77 | 77 | 73 | 66 | 83 |
| CBXC355 | inlet | 59 | 63 | 63 | 61 | 62 | 57 | 50 | 69 |
| | outlet | 62 | 61 | 66 | 68 | 66 | 59 | 52 | 73 |
| CBXC400 | inlet | 62 | 67 | 71 | 68 | 72 | 71 | 62 | 78 |
| | outlet | 64 | 69 | 72 | 74 | 75 | 72 | 61 | 80 |

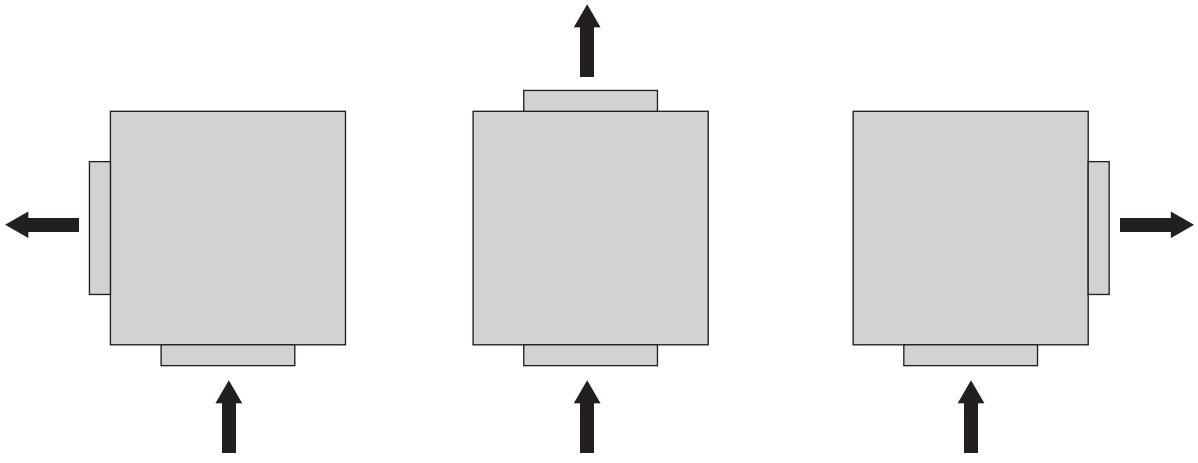
### Dimensions




| Model | Dimensions (mm) A | B | C | ØD |
|---|---|---|---|---|
| CBXC280S315 | 500 | 500 | 500 | 315 |
| CBXC280S355 | 500 | 500 | 500 | 355 |
| CBXC315S315 | 500 | 500 | 500 | 315 |
| CBXC315S355 | 500 | 500 | 500 | 355 |
| CBXC355S315 | 500 | 500 | 500 | 315 |
| CBXC355S355 | 500 | 500 | 500 | 355 |
| CBXC400S400 | 700 | 700 | 700 | 400 |
| CBXC400S450 | 700 | 700 | 700 | 450 |

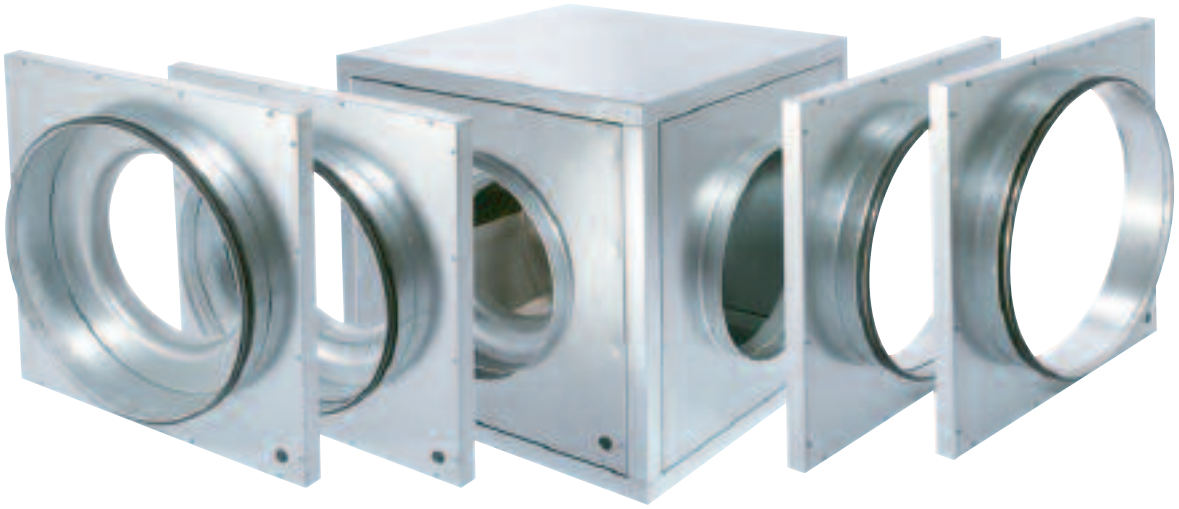
### Configurations

Outlet Spigot Options (plan view)

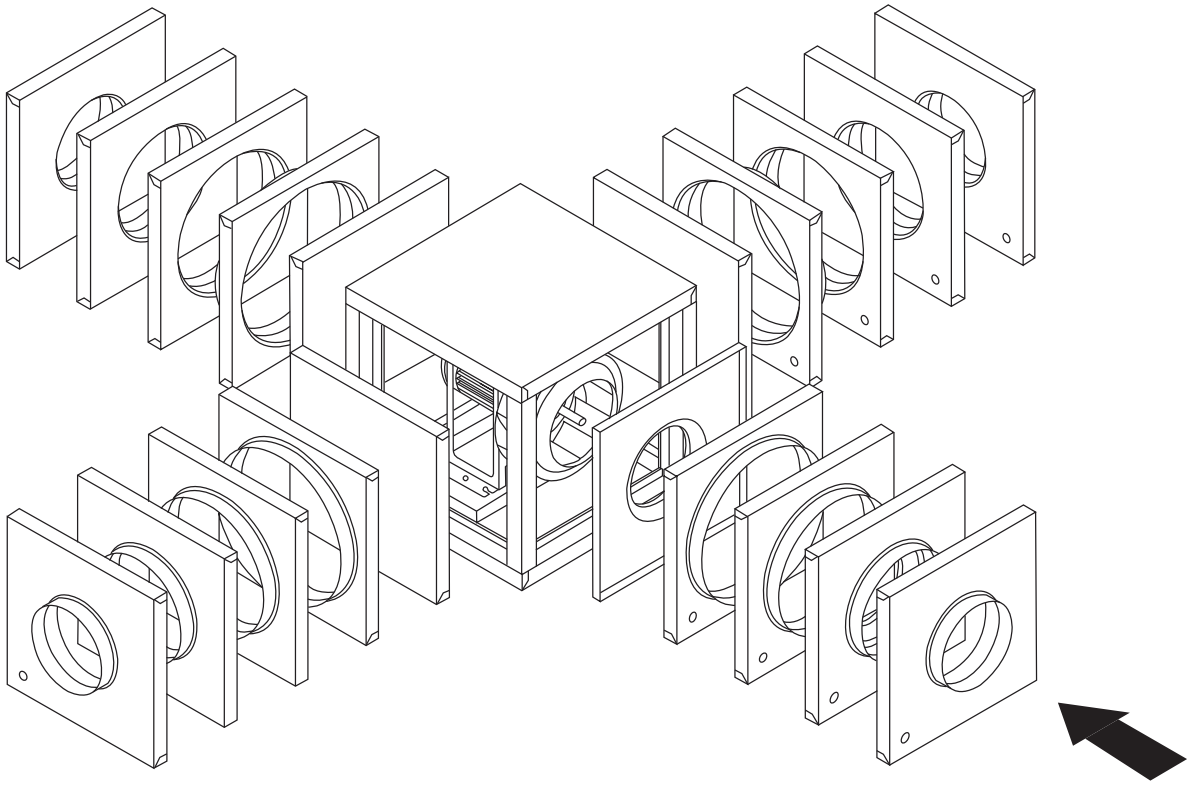


Left hand discharge | Inline discharge | Right hand discharge

## Configurations



### Spigot Configurations

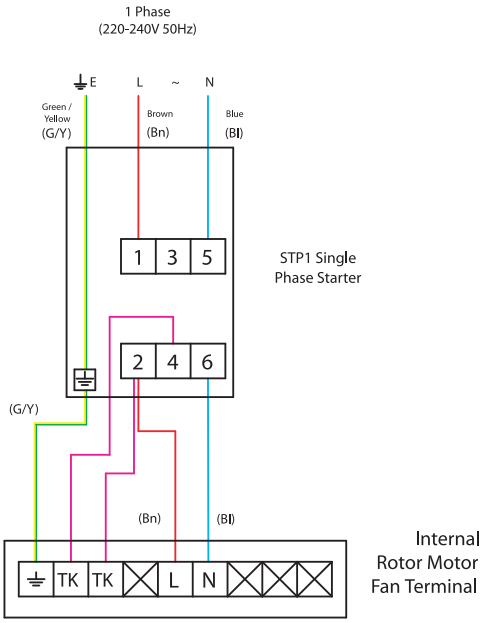


# Xpelair CubeX CMAX CBXC

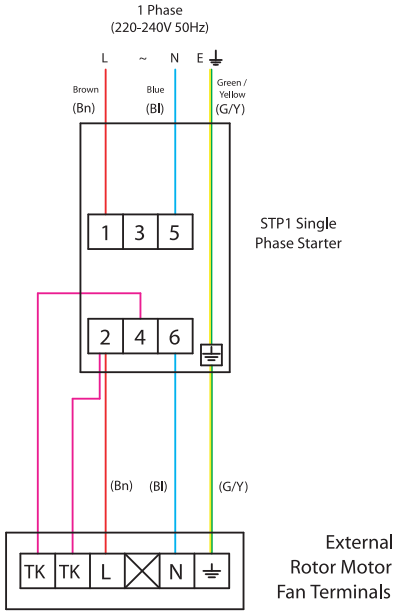
## Versatile attenuated inline fans

### Wiring Diagrams

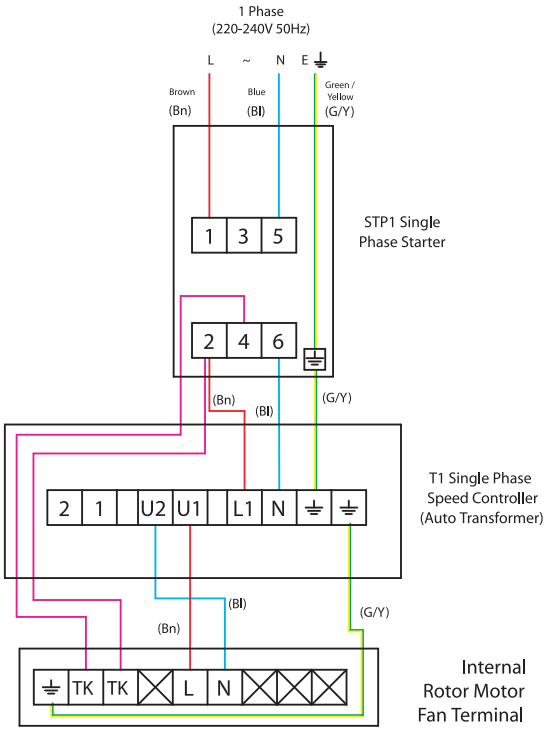
#### CBXC280/315/400 with starter STP1



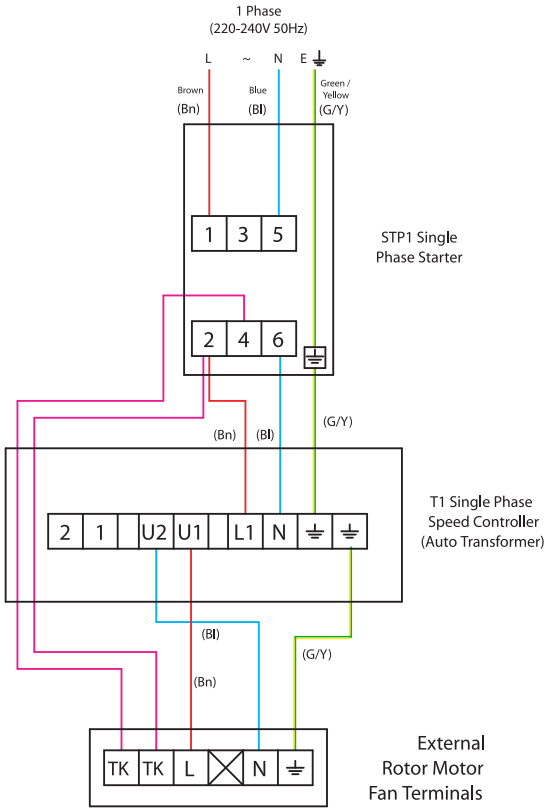

#### CBXC355 with starter STP1




#### CBXC280/315/400 with starter STP1 and 5 step transformer speed controller T1



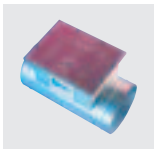
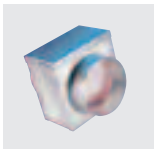
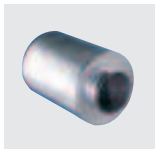
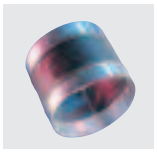

#### CBXC355 with starter STP1 and 5 step transformer speed controller T1

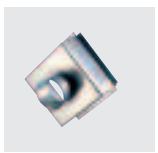
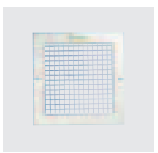
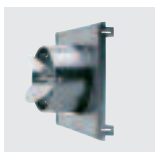


## Controllers

| |  |  |  |
|---|---|---|---|
| | | 5 Step Transformer Speed Controller T1 | Starter with Thermal Overload Protection STP1 |
| CBXC280S315 | | 91369AA | 91372AA |
| CBXC280S355 | | 91369AA | 91372AA |
| CBXC315S315 | | 91369AA | 91372AA |
| CBXC315S355 | | 91369AA | 91372AA |
| CBXC355S315 | | 91367AA | 91372AA |
| CBXC355S355 | | 91367AA | 91372AA |
| CBXC400S400 | | 91368AA | 91372AA |
| CBXC400S450 | | 91368AA | 91372AA |

## Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | | Inline Duct Heater IDH | Bag Filter Cassette CFC | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG |
| 315mm | | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 355mm | | | | | | | |
| 400mm | | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 450mm | | | 92247AA | | | | |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | | Grille Box GB | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | Four Way Ceiling Diffuser FW | Y Piece Splitter YPS | Aluminium Flexible Ducting Xflex ALU |
| 315mm | | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | 91292AA | 91440AA |
| 355mm | | | | | | | 91441AA |
| 400mm | | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | |
| 450mm | | | | | | | |

# Xpelair Combi CMAX XSFF

## Attenuated inline fan with filter

NEW


### Key features

| | |
|---|---|
| Application: | **Input systems** |
| Type: | **Attenuated fan with filter** |
| Control options: | **Electronic / 5 step transformer speed controller** |

CE 2 Year Guarantee

### The Range

The Xpelair **Combi CMAX** Input range combines all the benefits of low noise associated with an acoustically attenuated direct drive inline fan together with a long life integral filter. The range now extends from small systems to models with substantially higher airflows. Suitable for filtered air input systems in a wide range of commercial and industrial environments and suitable for filtered extract systems.

As well as the MAX acoustic lining dampened panel technology ensures low resonance from the fan deck making the range suitable for sound sensitive applications.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable for inspection via an access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**MAX attenuation**
CFC and HFC-free, class 'O' open cell expanded foam, for thermal and acoustic purposes, with a maximum thermal conductivity of 0.035 w/mk, fully in compliance with London Borough and CAA airport authority flammability and toxicity requirements. Adhesive is a light and ageing resistant modified acrylic synthetic resin with high temperature tolerance.

**Fans**
Double-inlet, double-width, centrifugal type with high efficiency, low noise, forward- curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor, external rotor type with power factors of better than 0.9. Max ambient operating temp at least 40°C. (Motors rated to 50ºC are available special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Thermal contactors are incorporated into the windings to ensure overload protection. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired to an IP54 external terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

**Filters**
Panel filters are EU2/3. Media has an extended surface area, continuous filament with F1 fire resistance to DIN 53438, dust holding capacity of 400 g/m2. Supported by an integral wire frame. Withdrawal is via removable top, bottom or side access panel.

## Performance Data

| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XSFF100** | **XSFF125** | **XSFF150** | **XSFF200** | **XSFF250** | **XSFF315/1** | **XSFF315/2** | **XSFF400/1** | **XSFF400/2** | **XSFF400/3** | **XSFF500/1** | **XSFF500/4** |
| Reference number | | 64081AA | 64082AA | 64083AA | 64084AA | 64086AA | 64087AA | 64088AA | 64089AA | 64090AA | 64067AA | 64068AA | 64071AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow (m³/s) | 0Pa | 0.066 | 0.125 | 0.190 | 0.235 | 0.490 | 0.500 | 0.690 | 0.730 | 1.000 | | 1.150 | 1.710 |
| | 50Pa | 0.061 | 0.120 | 0.185 | 0.220 | 0.470 | 0.480 | 0.675 | 0.710 | 0.975 | | 1.100 | 1.620 |
| | 100Pa | 0.058 | 0.115 | 0.180 | 0.205 | 0.440 | 0.450 | 0.652 | 0.690 | 0.945 | | 0.980 | 1.535 |
| | 150Pa | 0.055 | 0.110 | 0.170 | 0.190 | 0.400 | 0.410 | 0.625 | 0.673 | 0.910 | 1.000 | 0.920 | 1.384 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.172 | 0.313 | 0.320 | 0.590 | 0.636 | 0.860 | 0.916 | 0.810 | 1.210 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.016 | 0.020 | 0.540 | 0.575 | 0.800 | 0.860 | 0.585 | 1.010 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | | | 0.500 | 0.530 | 0.750 | | | |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.440 | 0.475 | 0.700 | 0.750 | 0.195 | 0.770 |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.315 | 0.350 | 0.640 | | | |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.140 | 0.170 | 0.540 | 0.402 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.120 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.005 | 0.195 | | |
| | 450Pa | | | | | | | | | | | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1300 | 1300 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (ºC) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 16 | 17 | 18 | 18 | 30 | 37 | 39 | 45 | 50 | 72 | 99 | 108 |

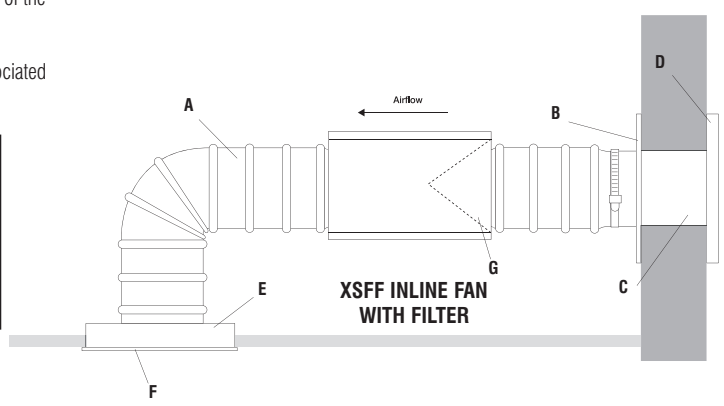
| | | Three phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XSFF500/2** | **XSFF500/3** | **XSFF500/5** | **XSFF600** |
| Reference number | | 64069AA | 64070AA | 64072AA | 64073AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow (m³/s) | 0Pa | 1.400 | | | |
| | 50Pa | 1.350 | | 1.815 | |
| | 100Pa | 1.262 | | 1.720 | |
| | 150Pa | 1.160 | | 1.605 | 2.700 |
| | 200Pa | 1.080 | | 1.376 | 2.650 |
| | 250Pa | 0.990 | | 1.122 | 2.490 |
| | 300Pa | 0.770 | 1.600 | 1.030 | 2.230 |
| | 350Pa | 0.111 | 1.520 | 0.600 | 1.830 |
| | 400Pa | | 1.470 | | 1.720 |
| | 450Pa | | 1.395 | | 1.192 |
| | 500Pa | | 1.345 | | 0.653 |
| | 550Pa | | 1.300 | | 0.120 |
| | 600Pa | | 1.260 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (ºC) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 99 | 99 | 101 | 166 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XSFF** range of inline fans.

The installation diagram shows a typical **XSFF** ducted installation and associated accessories.

| | | | |
|---|---|---|---|
| **A** | Flexible ducting | **F** | Ceiling diffuser |
| **B** | Spigot plate | **G** | Worm drive clip |
| **C** | Wall duct | | |
| **D** | External air operated louvre shutter | | |
| **E** | Spigot plate / damper | | |

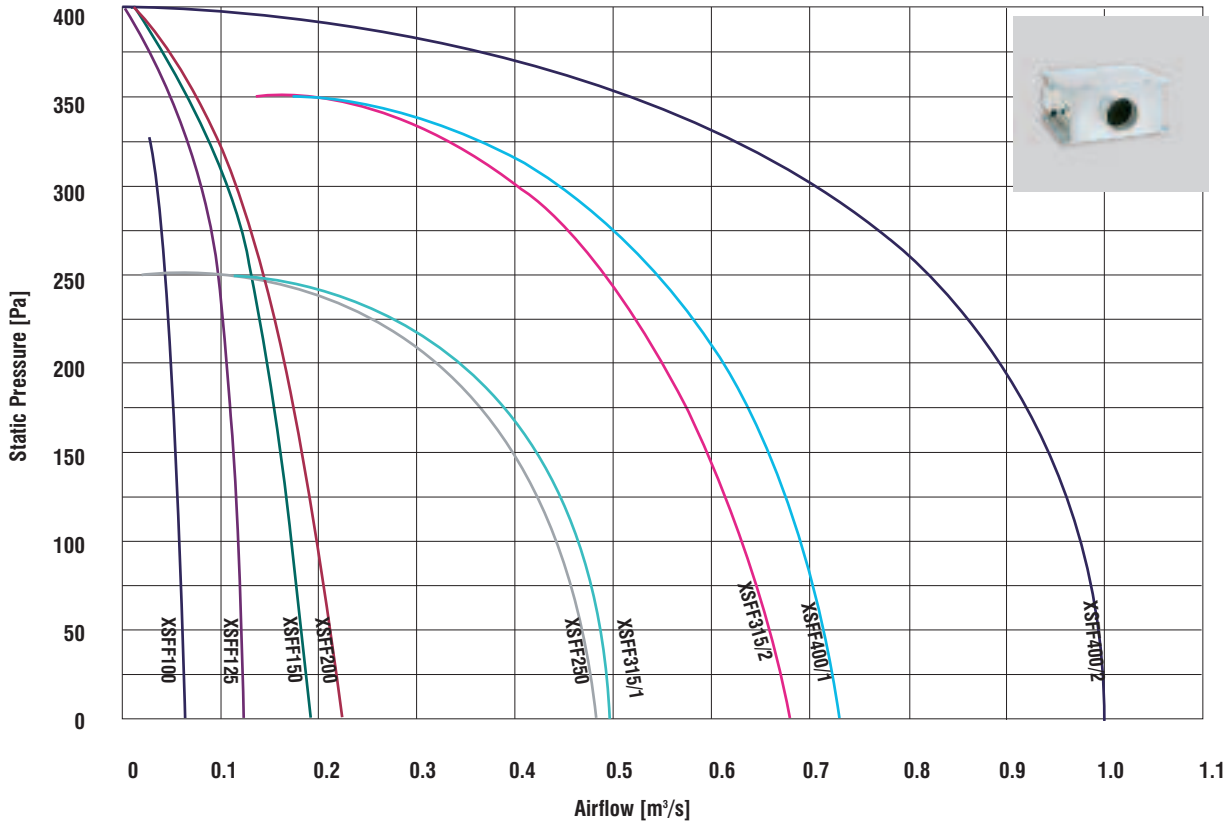


# Xpelair Combi CMAX XSFF

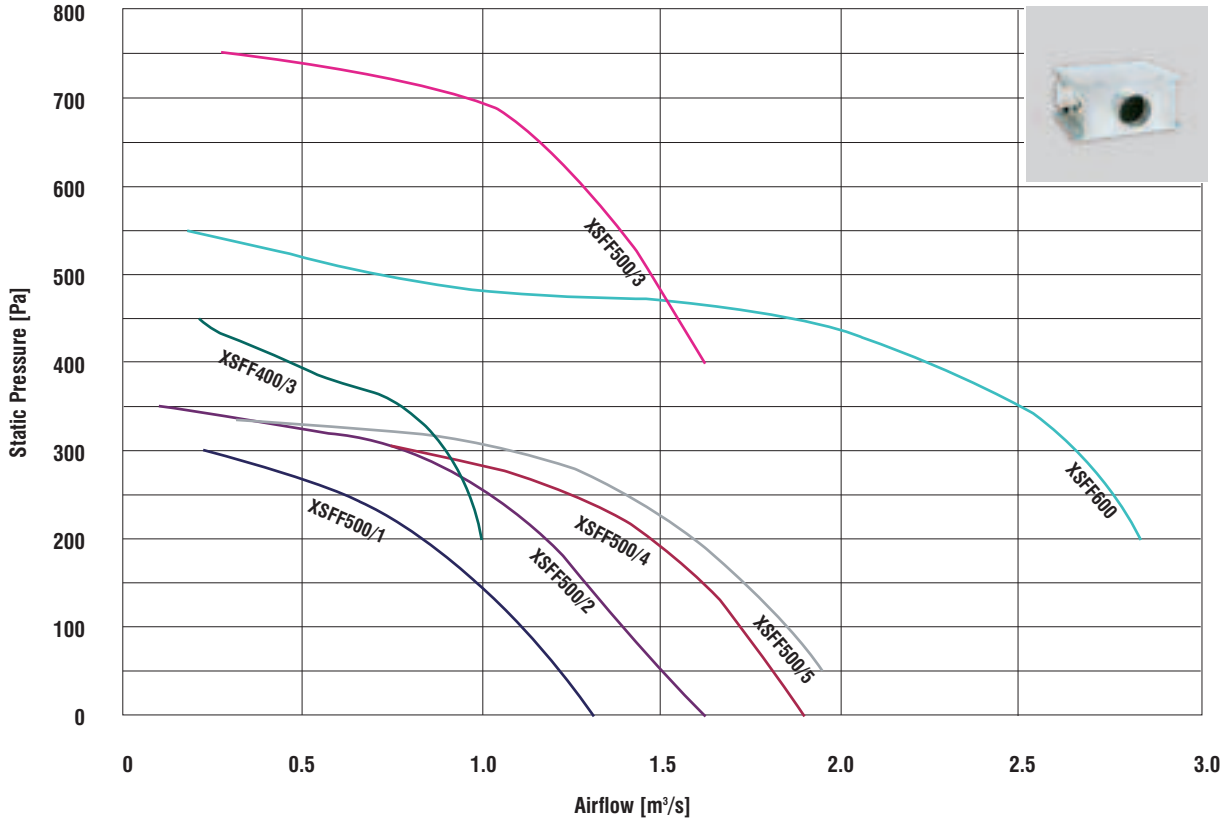
## Attenuated inline fan with filter

### Performance Graphs

XSFF100 to XSFF400/2




XSFF400/3 to XSFF600

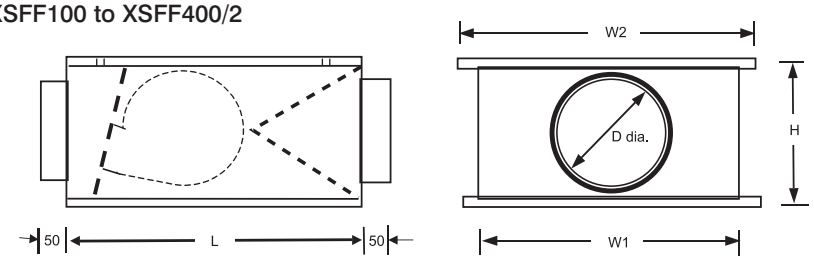


## Sound Power Data

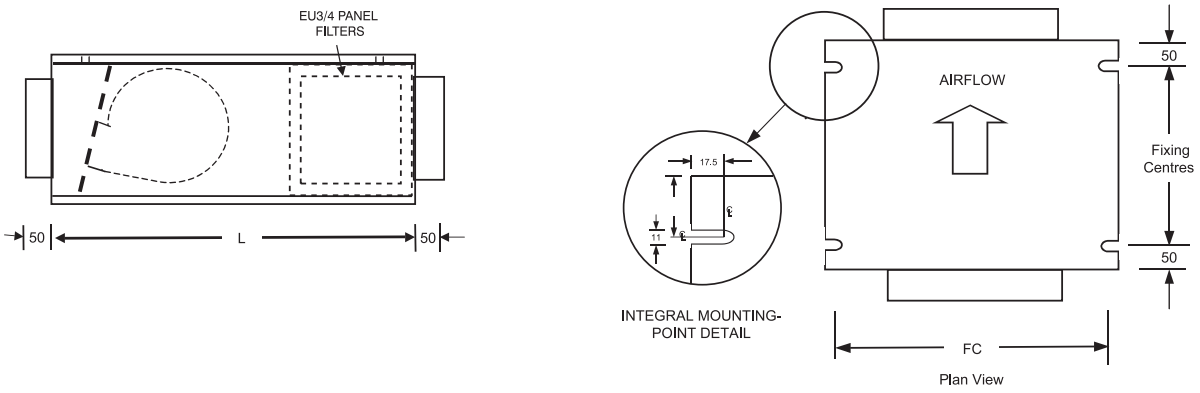
| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| **XSFF100** | 54 | 56 | 55 | 54 | 46 | 55 | 42 | 35 | 41 |
| **XSFF125** | 49 | 52 | 50 | 46 | 37 | 36 | 34 | 27 | 32 |
| **XSFF150** | 51 | 53 | 51 | 48 | 39 | 38 | 36 | 29 | 33 |
| **XSFF200** | 54 | 55 | 53 | 50 | 41 | 40 | 38 | 31 | 34 |
| **XSFF250** | 59 | 60 | 58 | 56 | 46 | 45 | 43 | 35 | 40 |
| **XSFF315/1** | 60 | 61 | 59 | 57 | 47 | 46 | 43 | 35 | 41 |
| **XSFF315/2** | 63 | 62 | 63 | 64 | 59 | 58 | 55 | 50 | 42 |
| **XSFF400/1** | 65 | 65 | 65 | 66 | 61 | 60 | 57 | 52 | 44 |
| **XSFF400/2** | 70 | 69 | 69 | 70 | 65 | 64 | 62 | 57 | 51 |
| **XSFF400/3** | 74 | 73 | 72 | 71 | 65 | 64 | 63 | 61 | 57 |
| **XSFF500/1** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XSFF500/2** | 73 | 72 | 71 | 70 | 64 | 63 | 62 | 60 | 56 |
| **XSFF500/3** | 80 | 79 | 78 | 77 | 71 | 70 | 69 | 67 | 63 |
| **XSFF500/4** | 71 | 70 | 69 | 68 | 62 | 61 | 60 | 58 | 54 |
| **XSFF500/5** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XSFF600** | 78 | 77 | 76 | 75 | 69 | 68 | 67 | 65 | 61 |

## Dimensions

### XSFF100 to XSFF400/2




### XSFF400/3 to XSFF600

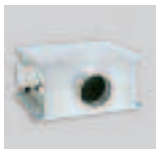



| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| **XSFF100** | 700 | 250 | 450 | 515 | 100 | 480 |
| **XSFF125** | 700 | 250 | 450 | 515 | 125 | 480 |
| **XSFF150** | 700 | 250 | 450 | 515 | 150 | 480 |
| **XSFF200** | 700 | 250 | 450 | 515 | 200 | 480 |
| **XSFF250** | 900 | 450 | 850 | 915 | 250 | 880 |
| **XSFF315/1** | 900 | 450 | 850 | 915 | 315 | 880 |
| **XSFF315/2** | 900 | 450 | 850 | 915 | 315 | 880 |
| **XSFF400/1** | 900 | 450 | 850 | 915 | 400 | 880 |
| **XSFF400/2** | 900 | 450 | 850 | 915 | 400 | 880 |
| **XSFF400/3** | 1000 | 500 | 850 | 915 | 400 | 880 |
| **XSFF500/1** | 1250 | 600 | 850 | 915 | 500 | 880 |
| **XSFF500/2** | 1250 | 600 | 850 | 915 | 500 | 880 |
| **XSFF500/3** | 1250 | 600 | 850 | 915 | 500 | 880 |
| **XSFF500/4** | 1250 | 600 | 850 | 915 | 500 | 880 |
| **XSFF500/5** | 1250 | 600 | 850 | 915 | 500 | 880 |
| **XSFF600** | 1450 | 750 | 1250 | 1315 | 600 | 1280 |

# Xpelair Combi CMAX XSFF

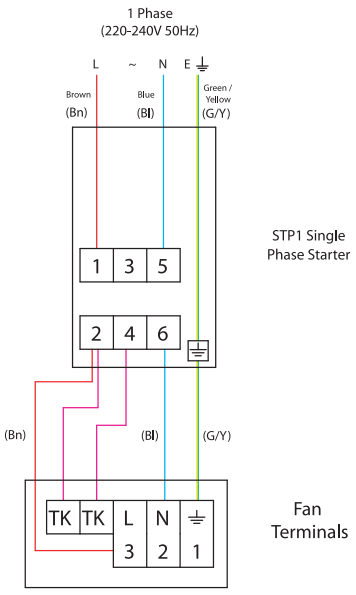
## Attenuated inline fan with filter

### Controllers

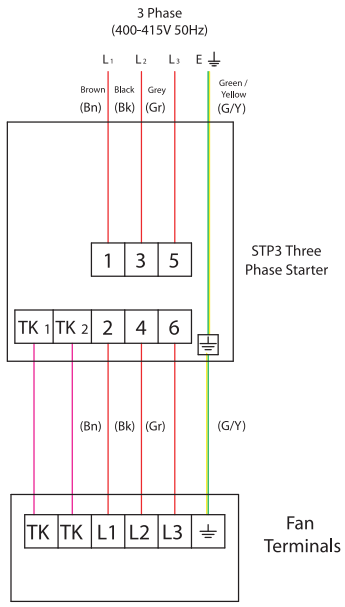
| | |  |  |  |
|---|---|---|---|---|
| | | | 5 Step Transformer Speed Controller T1/T3 | Starter with Thermal Overload Protection STP1/STP3 |
| Single Phase | XSFF100 | | 91367AA | 91372AA |
| | XSFF125 | | 91367AA | 91372AA |
| | XSFF150 | | 91367AA | 91372AA |
| | XSFF200 | | 91367AA | 91372AA |
| | XSFF250 | | 91368AA | 91372AA |
| | XSFF315/1 | | 91368AA | 91372AA |
| | XSFF315/2 | | 91368AA | 91372AA |
| | XSFF400/1 | | 91368AA | 91372AA |
| | XSFF400/2 | | 91369AA | 91372AA |
| | XSFF400/3 | | 91369AA | 91372AA |
| | XSFF500/1 | | 91369AA | 91372AA |
| | XSFF500/4 | | 91371AA | 91372AA |
| Three Phase | XSFF500/2 | | 91363AA | 91373AA |
| | XSFF500/3 | | 91364AA | 91373AA |
| | XSFF500/5 | | 91363AA | 91373AA |
| | XSFF600 | | 91365AA | 91373AA |

### Wiring Diagrams

XSFF with STP1 single phase starter

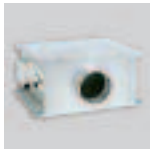
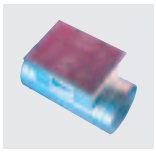
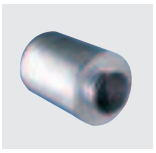
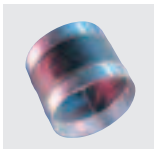
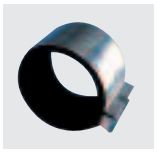


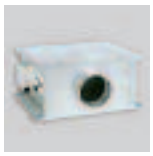
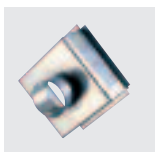
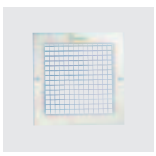
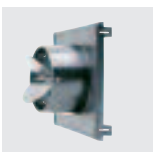

XSFF with STP3 three phase starter




For XSFF with 5 step transformer speed controller refer to XSF wiring diagrams on page 49

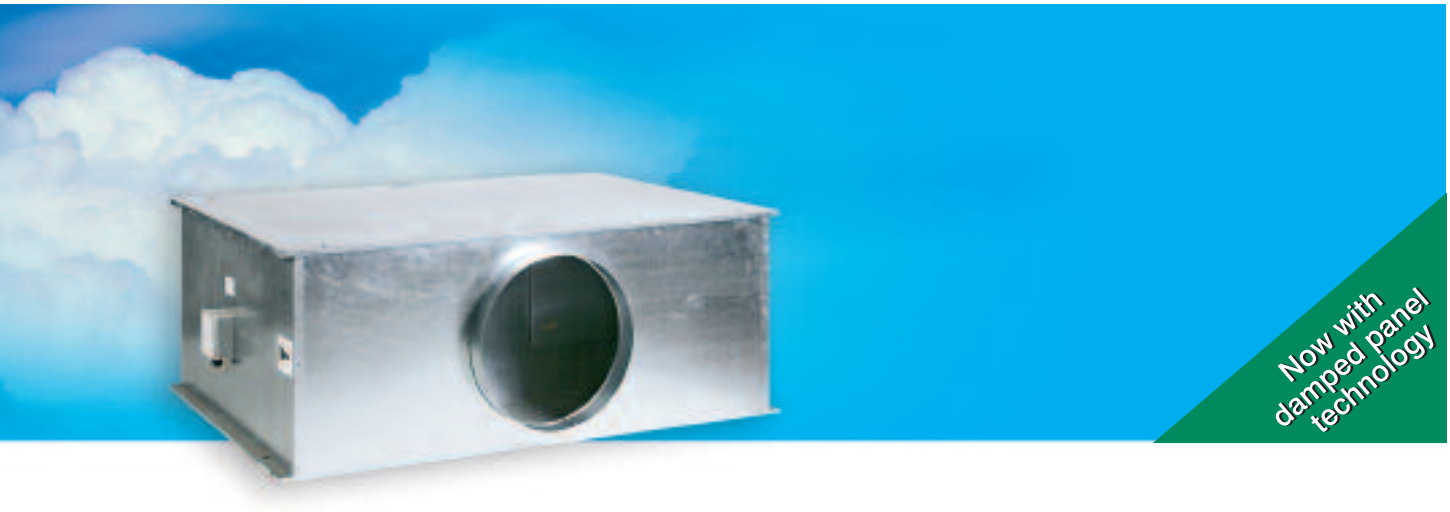
## Controllers and Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | Inline Duct Heater IDH | Y Piece Splitter YPS | Circular Silencer SIL | Flexible Connection FFC | Solid Duct Fastener XMK | Louvre Shutter XLG |
| 100mm | 90270AA | 91281AA | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 91283AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 91285AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 91287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 91290AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 91292AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | | | | | |
| 600mm | | | | | | |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| Duct Diameter | Grille Box GB | Egg-Crate Ceiling Grille (Silver) CG | Spigot Plate/ Damper FWS | Four Way Ceiling Diffuser FW | Circular Air Valve CAV | Aluminium Flexible Ducting Xflex ALU |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | 91430AA + 91424AA | | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | 91431AA + 91424AA | | | | 91438AA |
| 250mm | 89680AA + 89532AA | 91432AA + 91425AA | | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | 91456AA + 91426AA | | | | 91440AA |
| 400mm | | 91433AA + 91427AA<br>91434AA + 91428AA | | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |

# Xpelair HiFlo C Twin XTF

## Inline run and standby fans with flow switch




### Key features

| | |
|---|---|
| Application: | **Twin inline** |
| Type: | **Run and standby** |
| Control options: | **5 step transformer speed controller, Auto changeover** |

CE 2 Year Guarantee

### The Range

The Xpelair **HiFlo C Twin** range of inline fans is a system model line up of fans for use in ducting applications where high performance is required.

Suitable for light commercial and industrial applications such as schools, shops, sports complexes, offices, pubs and restaurants, the compact design of the range allows the fans to easily be accommodated above a suspended ceiling or floor void using the mounting points provided.

The range is high performance, and uses low noise level motors.

All models can be mounted with the cover upwards or inverted.

The HiFlo range is suitable for ambient temperatures from -30°C to +50°C (dependant on model) and an optional speed controller is available.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**Fans**
Single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor type with power factors of better than 0.9. Maximum ambient operating temp. at least 40°C. (Motors rated to 50°C are available special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions.

Thermal contactors are incorporated into the windings to ensure overload protection. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired via an external IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

**Controllers**
Auto changeover controller with duty sharing run and standby is used with the models in this range. Suitable for use with 5 step transformer speed controller or electronic controller.

## Performance Data

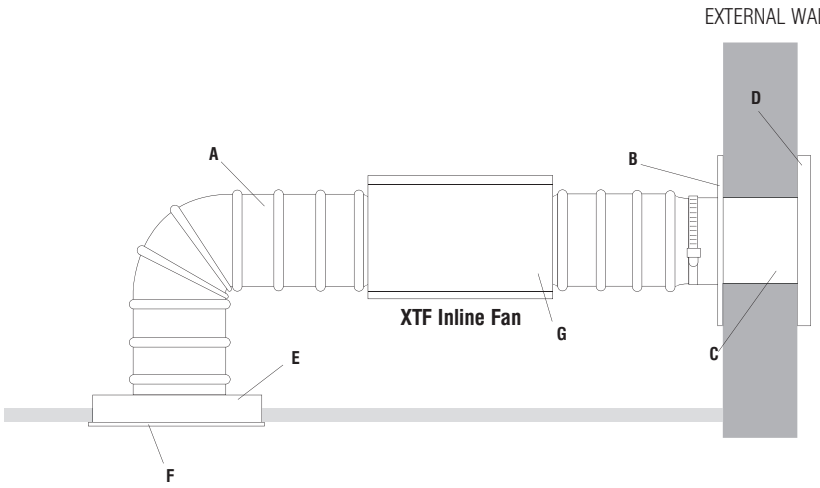
| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XTF100** | **XTF125** | **XTF150** | **XTF200** | **XTF250** | **XTF315/1** | **XTF315/2** | **XTF400/1** | **XTF400/2** | **XTF400/3** | **XTF500/1** | **XTF500/4** |
| Reference number | | 64021AA | 64022AA | 64023AA | 64024AA | 64026AA | 64027AA | 64667AA | 64028AA | 64029AA | 64053AA | 64054AA | 64057AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow (m³/s) | 0Pa | 0.070 | 0.125 | 0.190 | 0.240 | 0.530 | 0.580 | 0.700 | 0.720 | 1.050 | | 1.278 | 1.888 |
| | 50Pa | 0.065 | 0.120 | 0.185 | 0.225 | 0.520 | 0.567 | 0.680 | 0.700 | 1.025 | | 1.194 | 1.805 |
| | 100Pa | 0.060 | 0.115 | 0.180 | 0.210 | 0.496 | 0.546 | 0.660 | 0.680 | 0.985 | | 1.100 | 1.694 |
| | 150Pa | 0.056 | 0.110 | 0.170 | 0.193 | 0.460 | 0.510 | 0.640 | 0.660 | 0.950 | | 0.972 | 1.583 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.175 | 0.410 | 0.460 | 0.620 | 0.640 | 0.910 | 1.000 | 0.833 | 1.444 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.335 | 0.368 | 0.560 | 0.580 | 0.850 | 0.916 | 0.597 | 1.236 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | 0.220 | 0.222 | 0.515 | 0.530 | 0.798 | | | |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.465 | 0.475 | 0.750 | 0.860 | 0.195 | 0.777 |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.340 | 0.350 | 0.680 | | | |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.160 | 0.170 | 0.580 | 0.750 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.140 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.010 | 0.402 | | |
| | 450Pa | | | | | | | | | | 0.195 | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1200 | 1200 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 23 | 24 | 24 | 25 | 37 | 37 | 64 | 65 | 72 | 105 | 136 | 154 |

| | | Three phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XTF500/2** | **XTF500/3** | **XTF500/5** | **XTF600** |
| Reference number | | 64055AA | 64056AA | 64058AA | 64059AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow (m³/s) | 0Pa | 1.555 | | | |
| | 50Pa | 1.472 | | 1.945 | |
| | 100Pa | 1.388 | | 1.847 | |
| | 150Pa | 1.277 | | 1.740 | |
| | 200Pa | 1.170 | | 1.620 | 2.750 |
| | 250Pa | 1.000 | | 1.388 | 2.700 |
| | 300Pa | 0.777 | | 1.042 | 2.640 |
| | 350Pa | 0.111 | | 0.600 | 2.500 |
| | 400Pa | | 1.611 | | 2.222 |
| | 450Pa | | 1.527 | | 1.735 |
| | 500Pa | | 1.460 | | 0.666 |
| | 550Pa | | 1.389 | | 0.125 |
| | 600Pa | | 1.277 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 136 | 136 | 140 | 226 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XTF** range of inline run and standby fans. The installation diagram below shows a typical **XTF** ducted installation and associated accessories.

| | |
|---|---|
| **A** Flexible ducting | **E** Grille box |
| **B** Spigot plate | **F** Ceiling grille |
| **C** Wall duct | **G** Worm drive clip |
| **D** External air operated louvre shutter | |

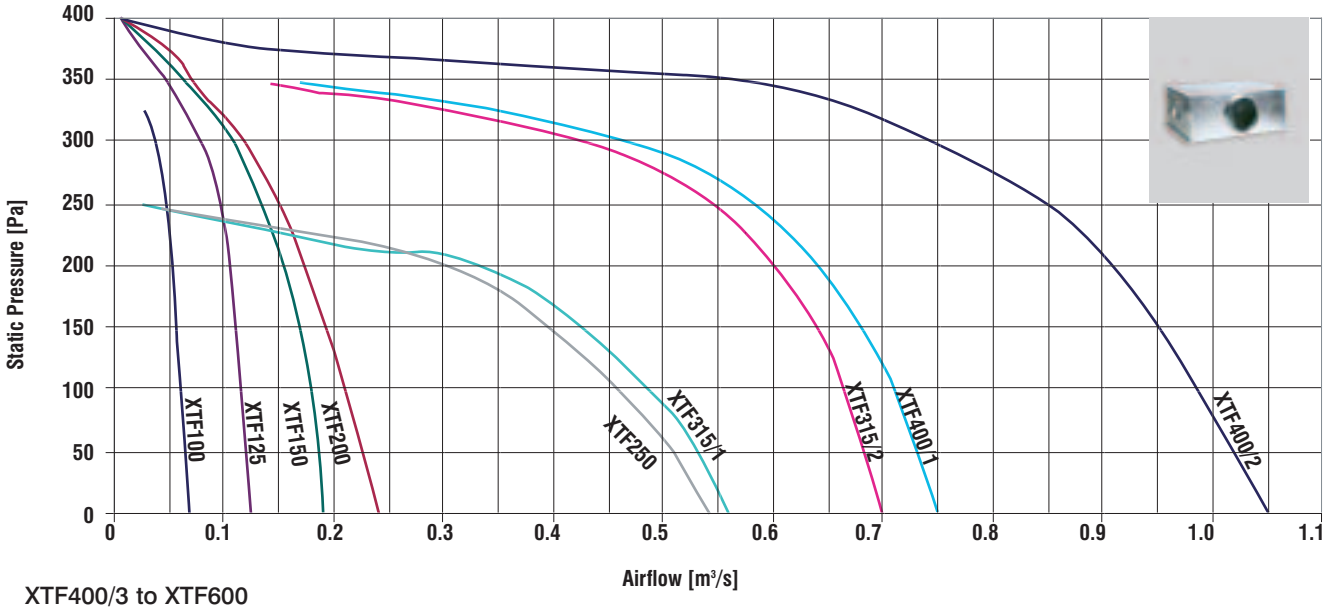


# Xpelair HiFlo C Twin XTF

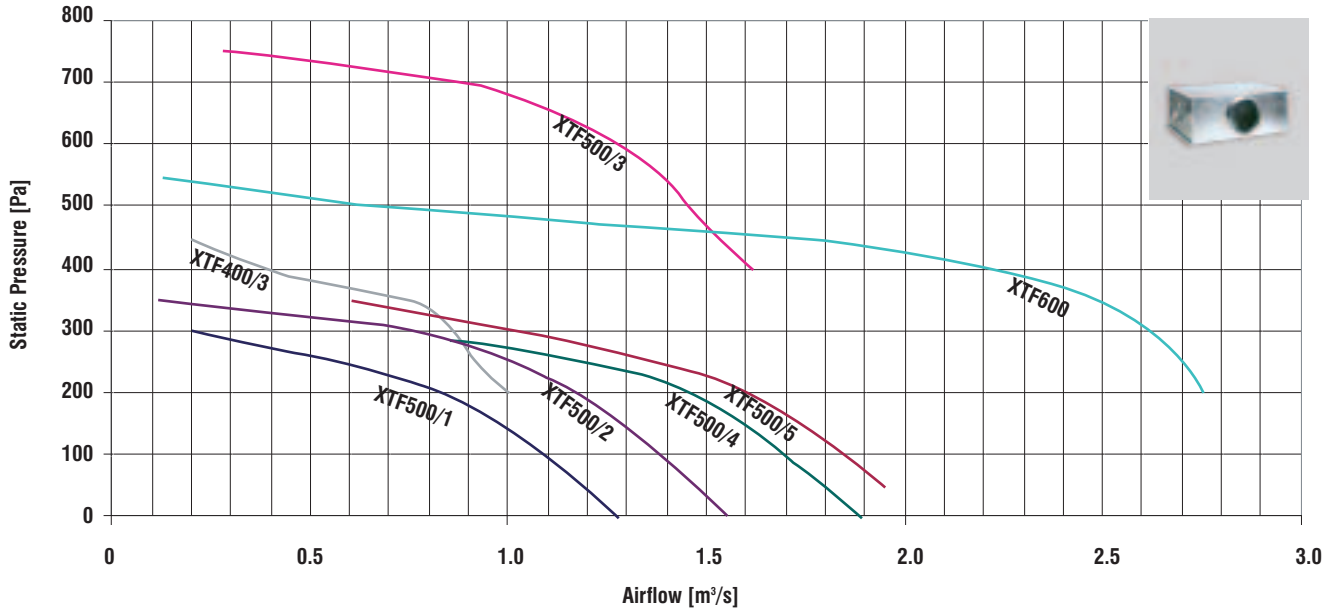
## Inline run and standby fans with flow switch

### Performance Graphs

XTF100 to XTF400/2



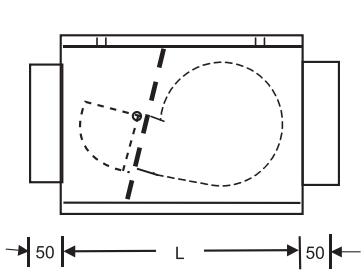

XTF400/3 to XTF600

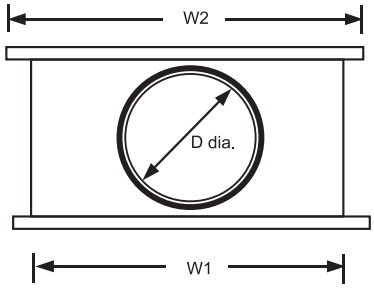



### Sound Power Data

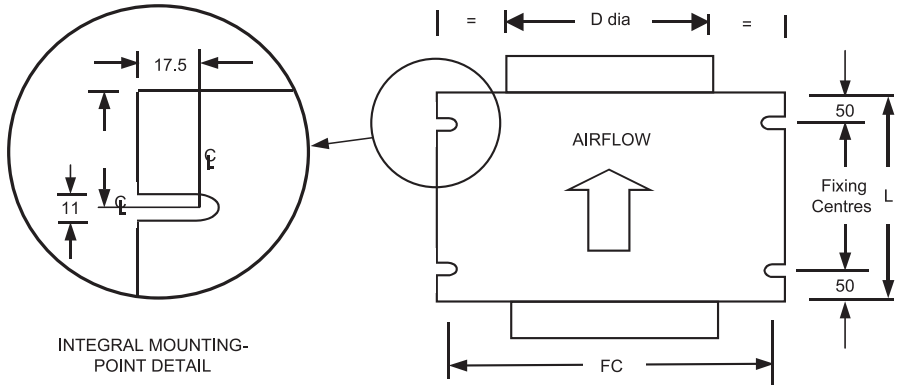
| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| **XTF100** | 56 | 58 | 57 | 57 | 52 | 53 | 50 | 43 | 41 |
| **XTF125** | 51 | 54 | 52 | 49 | 43 | 44 | 42 | 35 | 32 |
| **XTF150** | 53 | 55 | 53 | 51 | 45 | 46 | 44 | 37 | 33 |
| **XTF200** | 56 | 57 | 55 | 53 | 47 | 48 | 46 | 39 | 34 |
| **XTF250** | 61 | 62 | 60 | 59 | 52 | 53 | 51 | 53 | 42 |
| **XTF315/1** | 62 | 63 | 61 | 60 | 53 | 54 | 51 | 43 | 43 |
| **XTF315/2** | 65 | 64 | 65 | 67 | 65 | 66 | 63 | 58 | 42 |
| **XTF400/1** | 67 | 66 | 67 | 69 | 67 | 68 | 65 | 60 | 44 |
| **XTF400/2** | 72 | 71 | 71 | 73 | 71 | 72 | 70 | 65 | 51 |
| **XTF400/3** | 76 | 75 | 74 | 74 | 71 | 72 | 71 | 69 | 59 |
| **XTF500/1** | 74 | 73 | 72 | 72 | 69 | 70 | 69 | 77 | 57 |
| **XTF500/2** | 75 | 74 | 73 | 73 | 70 | 71 | 70 | 68 | 58 |
| **XTF500/3** | 82 | 81 | 80 | 800 | 77 | 78 | 77 | 75 | 65 |
| **XTF500/4** | 73 | 72 | 71 | 71 | 68 | 69 | 68 | 66 | 56 |
| **XTF500/5** | 74 | 73 | 72 | 72 | 69 | 70 | 69 | 67 | 57 |
| **XTF600** | 80 | 79 | 78 | 78 | 75 | 76 | 75 | 73 | 63 |

## Dimensions

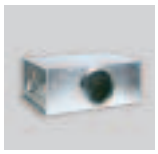



| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| XTF100 | 450 | 250 | 850 | 915 | 100 | 880 |
| XTF125 | 450 | 250 | 850 | 915 | 125 | 880 |
| XTF150 | 450 | 250 | 850 | 915 | 150 | 880 |
| XTF200 | 450 | 250 | 850 | 915 | 200 | 880 |
| XTF250 | 600 | 450 | 1250 | 1315 | 250 | 1280 |
| XTF315/1 | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| XTF315/2 | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| XTF400/1 | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| XTF400/2 | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| XTF400/3 | 900 | 500 | 1250 | 1315 | 400 | 1280 |
| XTF500/1 | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| XTF500/2 | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| XTF500/3 | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| XTF500/4 | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| XTF500/5 | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| XTF600 | 1100 | 750 | 1650 | 1715 | 600 | 1680 |




## Controllers

| | |  |  |  |  |
|---|---|---|---|---|---|
| | | | 5 Step Transformer Speed Controller T1/T3 | Auto Changeover Controller with Manual Duty Share MAC-M | Auto Changeover Controller with Auto Duty Share MAC-A |
| Single Phase | XTF100 | | 91367AA | 64295AA | 64296AA |
| | XTF125 | | 91367AA | 64295AA | 64296AA |
| | XTF150 | | 91367AA | 64295AA | 64296AA |
| | XTF200 | | 91367AA | 64295AA | 64296AA |
| | XTF250 | | 91368AA | 64295AA | 64296AA |
| | XTF315/1 | | 91368AA | 64295AA | 64296AA |
| | XTF315/2 | | 91368AA | 64295AA | 64296AA |
| | XTF400/1 | | 91368AA | 64295AA | 64296AA |
| | XTF400/2 | | 91369AA | 64295AA | 64296AA |
| | XTF400/3 | | 91369AA | 64295AA | 64296AA |
| | XTF500/1 | | 91369AA | 64295AA | 64296AA |
| | XTF500/4 | | 91371AA | 64295AA | 64296AA |
| Three Phase | XTF500/2 | | 91363AA | 64295AA | 64296AA |
| | XTF500/3 | | 91364AA | 64295AA | 64296AA |
| | XTF500/5 | | 91363AA | 64295AA | 64296AA |
| | XTF600 | | 91365AA | 64295AA | 64296AA |

# Xpelair HiFlo C Twin XTF

## Inline run and standby fans with flow switch

### Controllers

#### Auto Changeover Switches

**MAC-M manual duty sharing controller with auto changeover on fan failure**

Allows manual selection of the 'duty' and 'standby' fans. Automatic changeover occurs when one of the fans fails.

The changeover panel incorporates a 'power on' indicator, and 'run' and 'fail' lights indicating fan operational status.

When 'Fan 1' is manually selected, the light sequence is:

Amber power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light OFF
Fan 2 green 'run' light OFF
Fan 2 red 'fail' light OFF

When 'Fan 2' is manually selected, the 'Fan 1' green 'run' light is OFF and the 'Fan 2' green 'run' light is ON.

When the automatic changeover panel switches to 'Fan 2' due to 'Fan 1' failure, the light sequence is:

Amber power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light ON
Fan 2 green 'run' light ON
Fan 2 red 'fail' light OFF

When 'Fan 1' is operational due to 'Fan 2' failure, the 'Fan 1' red 'fail' light is OFF and the 'Fan 2' red 'fail' light is ON.

Fan 'failure' is via a very reliable airflow sensing flow switch device within the case. This gives automatic changeover and fan status indication on the control panel.

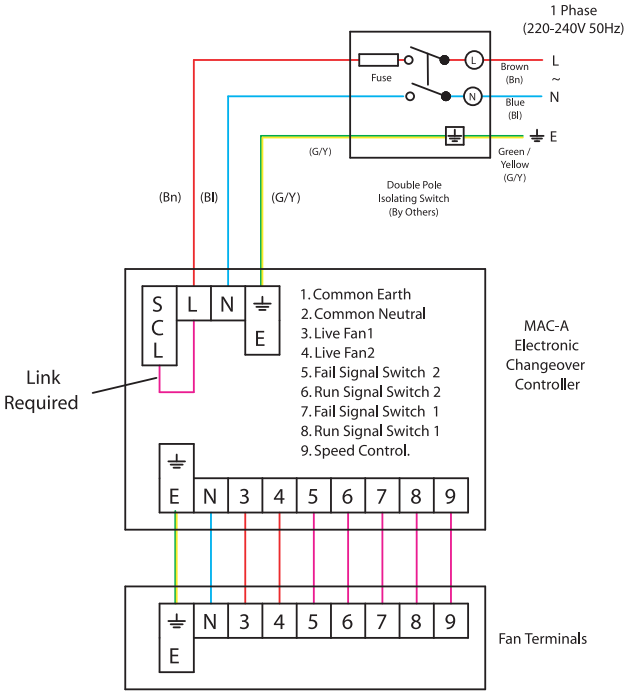
MAC-M manual duty sharing controller with auto changeover should be switched from 'Fan 1' run to 'Fan 2' run on a weekly cycle.

**MAC-A automatic duty sharing controller with auto changeover on fan failure**

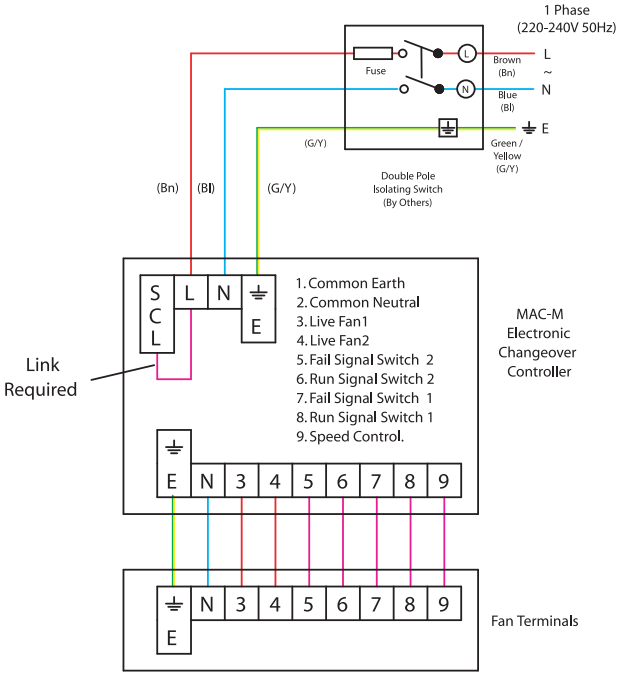
Operates as MAC-M with the addition of automatic timed change of the 'duty' and 'standby' fans every 12 hours.

### Wiring Diagrams

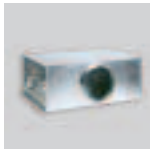
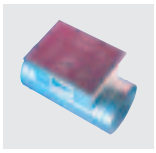
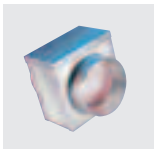
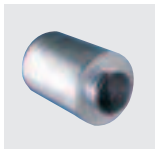
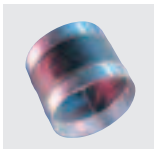
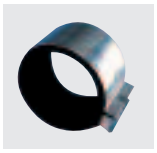
#### XTF with MAC-A automatic duty sharing controller

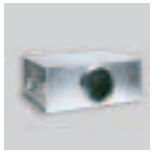
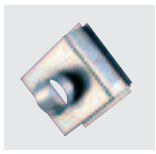
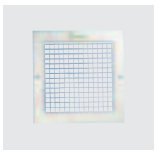
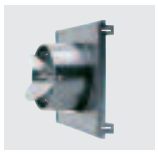



#### XTF with MAC-M manual duty sharing controller



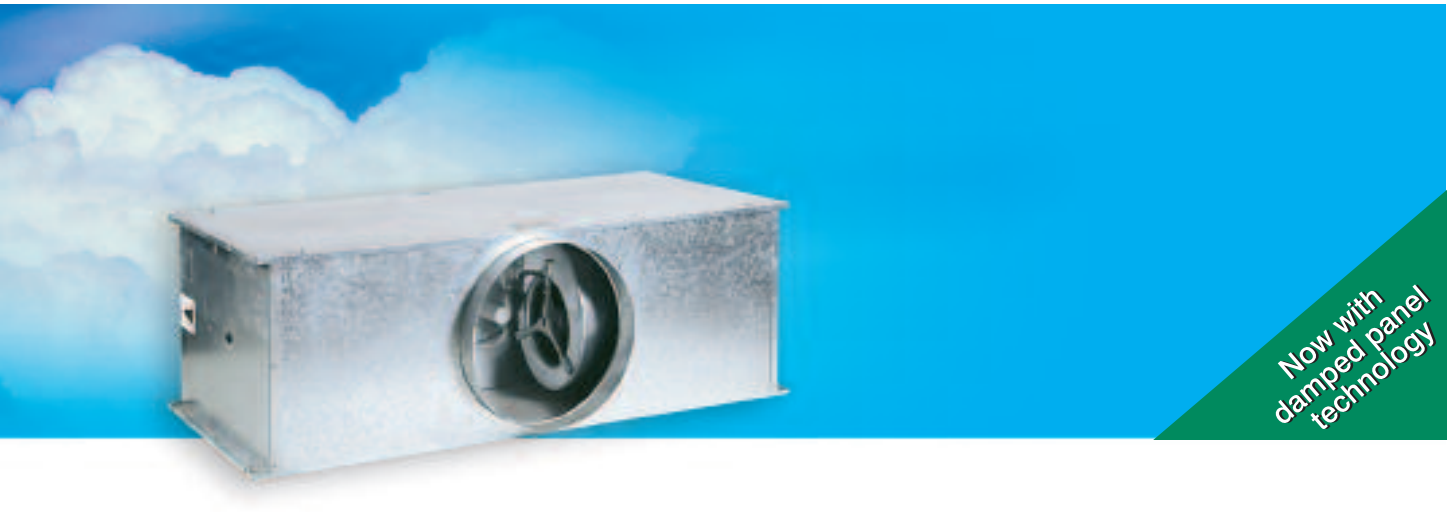
## Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Inline Duct Heater IDH** | **Bag Filter Cassette CFC** | **Circular Silencer SIL** | **Flexible Connection FFC** | **Solid Duct Fastener XMK** | **Louvre Shutter XLG** |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | 92248AA | | | 91970AA | |
| 600mm | | | | | 91971AA | |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Grille Box GB** | **Egg-Crate Ceiling Grille (Silver) CG** | **Spigot Plate/ Damper FWS** | **Four Way Ceiling Diffuser FW** | **Circular Air Valve CAV** | **Aluminium Flexible Ducting Xflex ALU** |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | | 91430AA + 91424AA | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | | 91431AA + 91424AA | | | 91438AA |
| 250mm | 89680AA + 89532AA | | 91432AA + 91425AA | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | | 91440AA |
| 400mm | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |

# Xpelair HiFlo C Twin XDF

## Inline run and standby fans with motor sensing




### Key features

| | |
|---|---|
| Type: | **Twin inline** |
| Application: | **Run and standby** |
| Control options: | **Auto changeover** |

CE 2 Year Guarantee

### The Range

The Xpelair **HiFlo C Twin** range of inline fans is a 16 model line up of fans for use in ducting applications where high performance is required. Each fan combines innovative features to increase efficiency, reduce noise and make installation easier.

With models suitable for light commercial through to industrial applications such as schools, shops, sports complexes, offices, pubs and restaurants, the compact design allows the fans to be easily accommodated above a suspended ceiling or below a floor void using the mounting points provided.

All models can be mounted with the cover upwards or inverted.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**Fans**
Single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor type with power factors of better than 0.9. Maximum ambient operating temp. of at least 40°C. (Motors rated to 50ºC are available to special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions.

Thermal contactors are incorporated into the windings to ensure overload protection. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired via an external IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity. Autochangeover with run and standby is used with this model.

**Controllers**
Auto changeover controller with duty sharing run and standby is used with the models in this range.

## Performance Data

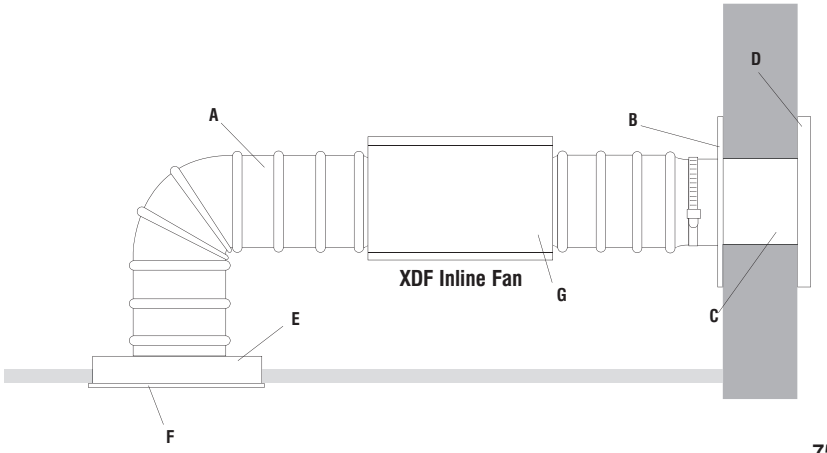
| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XDF100** | **XDF125** | **XDF150** | **XDF200** | **XDF250** | **XDF315/1** | **XDF315/2** | **XDF400/1** | **XDF400/2** | **XDF400/3** | **XDF500/1** | **XDF500/4** |
| Reference number | | 92111AA | 92112AA | 92113AA | 92114AA | 92115AA | 92116AA | 92117AA | 92118AA | 92119AA | 92120AA | 92121AA | 92124AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow ($m^3/s$) | 0Pa | 0.070 | 0.125 | 0.190 | 0.240 | 0.530 | 0.580 | 0.700 | 0.720 | 1.050 | | 1.278 | 1.888 |
| | 50Pa | 0.065 | 0.120 | 0.185 | 0.225 | 0.520 | 0.567 | 0.680 | 0.700 | 1.025 | | 1.194 | 1.805 |
| | 100Pa | 0.060 | 0.115 | 0.180 | 0.210 | 0.496 | 0.546 | 0.660 | 0.680 | 0.985 | | 1.100 | 1.694 |
| | 150Pa | 0.056 | 0.110 | 0.170 | 0.193 | 0.460 | 0.510 | 0.640 | 0.660 | 0.950 | | 0.972 | 1.583 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.175 | 0.410 | 0.460 | 0.620 | 0.640 | 0.910 | 1.000 | 0.833 | 1.444 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.335 | 0.368 | 0.560 | 0.580 | 0.850 | 0.916 | 0.597 | 1.236 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | 0.220 | 0.222 | 0.515 | 0.530 | 0.798 | | | |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.465 | 0.475 | 0.750 | 0.860 | 0.195 | 0.777 |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.340 | 0.350 | 0.680 | | | |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.160 | 0.170 | 0.580 | 0.750 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.140 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.010 | 0.402 | | |
| | 450Pa | | | | | | | | | | 0.195 | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1200 | 1200 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 23 | 24 | 24 | 25 | 37 | 37 | 64 | 65 | 72 | 105 | 136 | 154 |

| | | Three phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XDF500/2** | **XDF500/3** | **XDF500/5** | **XDF600** |
| Reference number | | 92122AA | 92123AA | 92125AA | 92126AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow ($m^3/s$) | 0Pa | 1.555 | | | |
| | 50Pa | 1.472 | | 1.945 | |
| | 100Pa | 1.388 | | 1.847 | |
| | 150Pa | 1.277 | | 1.740 | |
| | 200Pa | 1.170 | | 1.620 | 2.750 |
| | 250Pa | 1.000 | | 1.388 | 2.700 |
| | 300Pa | 0.777 | | 1.042 | 2.640 |
| | 350Pa | 0.111 | | 0.600 | 2.500 |
| | 400Pa | | 1.611 | | 2.222 |
| | 450Pa | | 1.527 | | 1.735 |
| | 500Pa | | 1.460 | | 0.666 |
| | 550Pa | | 1.389 | | 0.125 |
| | 600Pa | | 1.277 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 136 | 136 | 140 | 226 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XDF** range of inline run and standby fans. The installation diagram below shows a typical **XDF** ducted installation and associated accessories.

EXTERNAL WALL



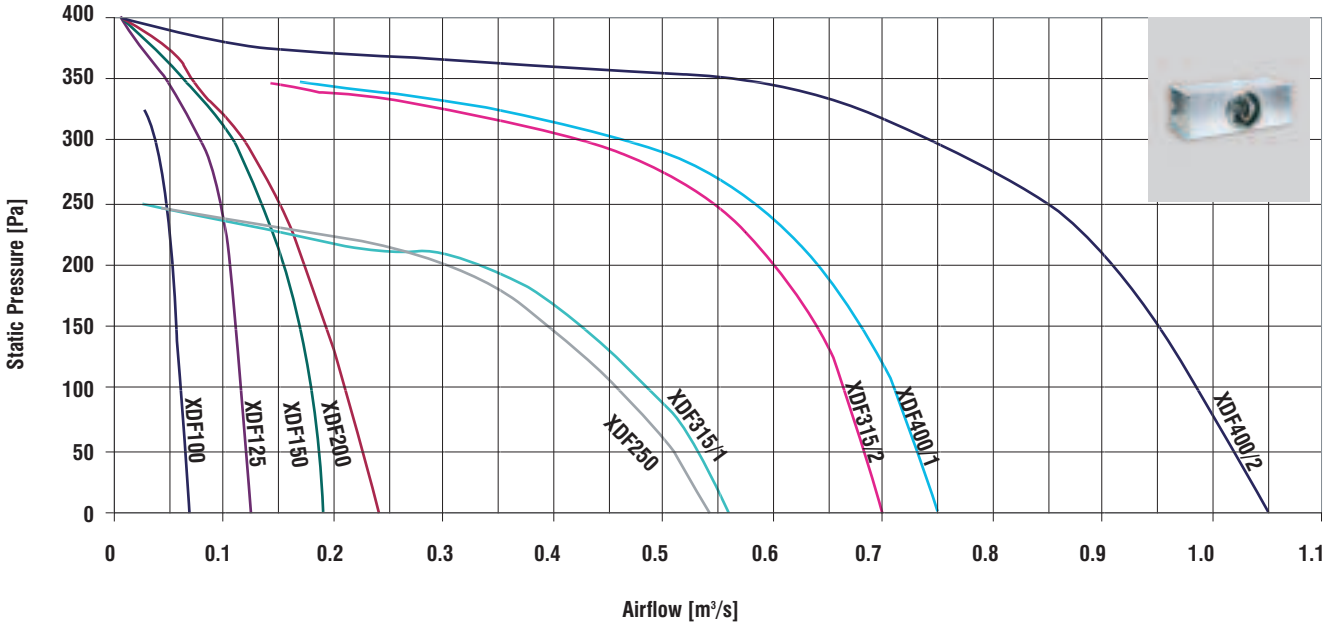

| | | | |
|---|---|---|---|
| **A** | Flexible ducting | **E** | Grille box |
| **B** | Spigot plate | **F** | Ceiling grille |
| **C** | Wall duct | **G** | Worm drive clip |
| **D** | External air operated louvre shutter | | |

# Xpelair HiFlo C Twin XDF

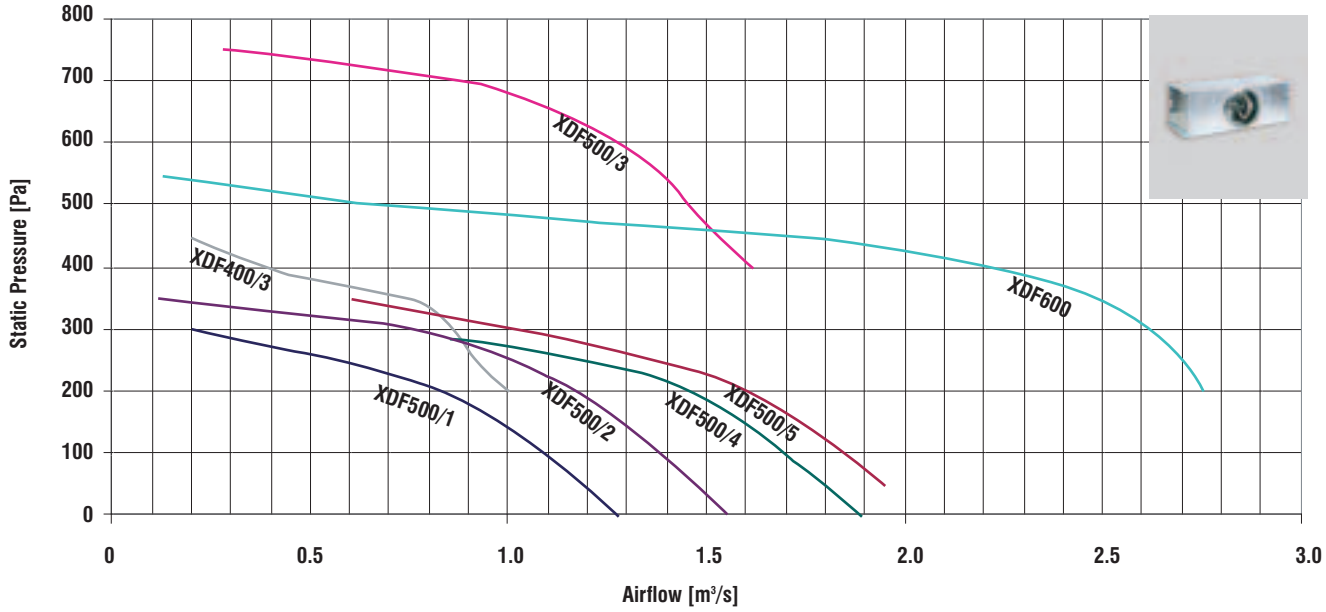
## Inline run and standby fans with motor sensing

### Performance Graphs

XDF100 to XDF400/2




XDF400/3 to XDF600



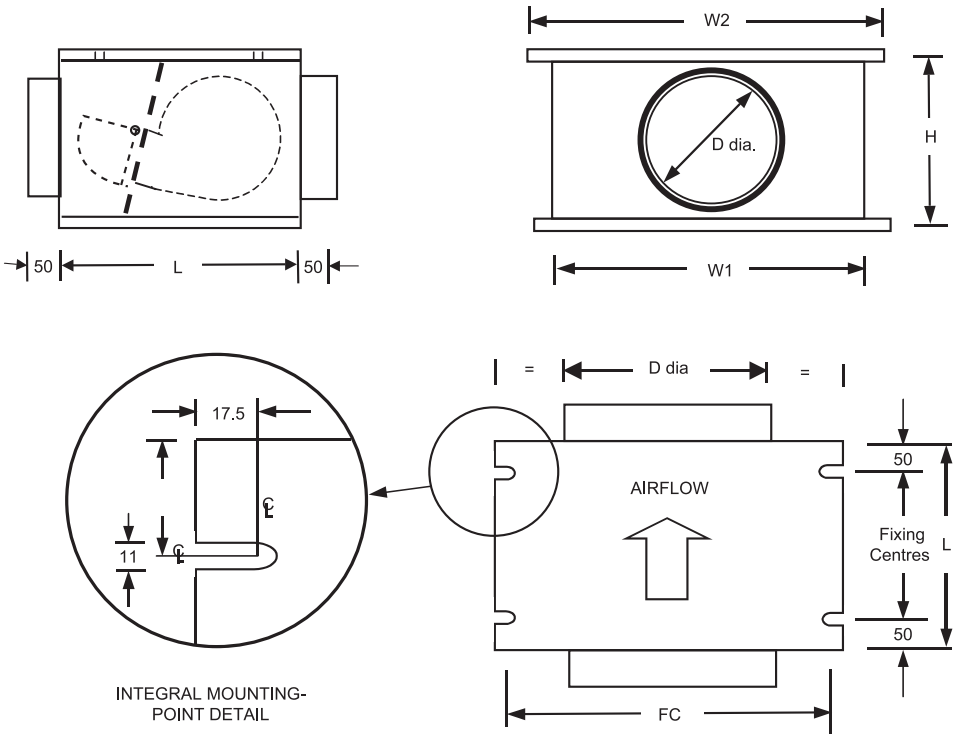

### Wiring Diagrams

Refer to pages 45 for wiring diagrams for twin fan with automatic duty sharing controller.

## Sound Power Data

| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| **XDF100** | 56 | 58 | 57 | 57 | 52 | 53 | 50 | 43 | 41 |
| **XDF125** | 51 | 54 | 52 | 49 | 43 | 44 | 42 | 35 | 32 |
| **XDF150** | 53 | 55 | 53 | 51 | 45 | 46 | 44 | 37 | 33 |
| **XDF200** | 56 | 57 | 55 | 53 | 47 | 48 | 46 | 39 | 34 |
| **XDF250** | 61 | 62 | 60 | 59 | 52 | 53 | 51 | 53 | 42 |
| **XDF315/1** | 62 | 63 | 61 | 60 | 53 | 54 | 51 | 43 | 43 |
| **XDF315/2** | 65 | 64 | 65 | 67 | 65 | 66 | 63 | 58 | 42 |
| **XDF400/1** | 67 | 66 | 67 | 69 | 67 | 68 | 65 | 60 | 44 |
| **XDF400/2** | 72 | 71 | 71 | 73 | 71 | 72 | 70 | 65 | 51 |
| **XDF400/3** | 76 | 75 | 74 | 74 | 71 | 72 | 71 | 69 | 59 |
| **XDF500/1** | 74 | 73 | 72 | 72 | 69 | 70 | 69 | 77 | 57 |
| **XDF500/2** | 75 | 74 | 73 | 73 | 70 | 71 | 70 | 68 | 58 |
| **XDF500/3** | 82 | 81 | 80 | 800 | 77 | 78 | 77 | 75 | 65 |
| **XDF500/4** | 73 | 72 | 71 | 71 | 68 | 69 | 68 | 66 | 56 |
| **XDF500/5** | 74 | 73 | 72 | 72 | 69 | 70 | 69 | 67 | 57 |
| **XDF600** | 80 | 79 | 78 | 78 | 75 | 76 | 75 | 73 | 63 |

## Dimensions




| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| **XDF100** | 450 | 250 | 850 | 915 | 100 | 880 |
| **XDF125** | 450 | 250 | 850 | 915 | 125 | 880 |
| **XDF150** | 450 | 250 | 850 | 915 | 150 | 880 |
| **XDF200** | 450 | 250 | 850 | 915 | 200 | 880 |
| **XDF250** | 600 | 450 | 1250 | 1315 | 250 | 1280 |
| **XDF315/1** | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| **XDF315/2** | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| **XDF400/1** | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| **XDF400/2** | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| **XDF400/3** | 900 | 500 | 1250 | 1315 | 400 | 1280 |
| **XDF500/1** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XDF500/2** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XDF500/3** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XDF500/4** | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| **XDF500/5** | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| **XDF600** | 1100 | 750 | 1650 | 1715 | 600 | 1680 |

# Xpelair HiFlo C Twin XDF

## Inline run and standby fans with motor sensing

### Controllers

| | |  |  |  |
|---|---|---|---|---|
| | | | Auto Changeover Controller with Auto Duty Share ACO-1 | Auto Changeover Controller with Auto Duty Share ACO-3 |
| Single Phase | XDF100 | | 72774AA | N/A |
| | XDF125 | | 72774AA | N/A |
| | XDF150 | | 72774AA | N/A |
| | XDF200 | | 72774AA | N/A |
| | XDF250 | | 72774AA | N/A |
| | XDF315/1 | | 72774AA | N/A |
| | XDF315/2 | | 72774AA | N/A |
| | XDF400/1 | | 72774AA | N/A |
| | XDF400/2 | | N/A | N/A |
| | XDF400/3 | | 72774AA | N/A |
| | XDF500/1 | | N/A | N/A |
| | XDF500/4 | | N/A | N/A |
| Three Phase | XDF500/2 | | N/A | 72775AA |
| | XDF500/3 | | N/A | N/A |
| | XDF500/5 | | N/A | 72775AA |
| | XDF600 | | N/A | N/A |

### Auto Changeover Switches

**ACO-1 and ACO-3 automatic duty sharing controllers with auto changeover on fan failure**
Provides automatic timed change of the 'duty' and 'standby' fans every 12 hours. Automatic changeover also occurs when one of the fans fails.

The changeover panel incorporates a 'power on' indicator, and 'run' and 'fail' lights indicating fan operational status.

When the ACO is switched on, 'Fan 1' operates and the light sequence is:

Red power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light OFF
Fan 2 green 'run' light OFF
Fan 2 red 'fail' light OFF

When 'Fan 2' is automatically selected, the 'Fan 1' green 'run' light is OFF and the 'Fan 2' green 'run' light is ON.

When the automatic changeover panel switches to 'Fan 2' due to 'Fan 1' failure, the light sequence is:

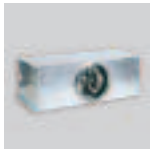
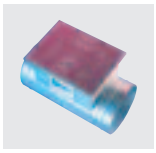
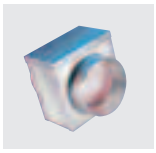
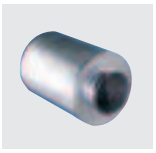
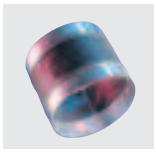
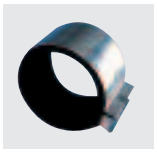
Red power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light ON
Fan 2 green 'run' light ON
Fan 2 red 'fail' light OFF

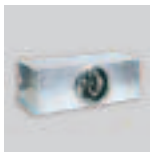
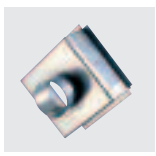
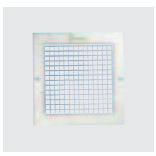
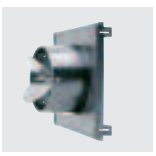
When 'Fan 1' is operational due to 'Fan 2' failure, the 'Fan 1' red 'fail' light is OFF and the 'Fan 2' red 'fail' light is ON.

Fan 'failure' is via a very reliable airflow sensing flow switch device within the case. This gives automatic changeover and fan status indication on the control panel.

Available in single phase (ACO-1) and three phase (ACO-3) versions.


## Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Inline Duct Heater IDH** | **Bag Filter Cassette CFC** | **Circular Silencer SIL** | **Flexible Connection FFC** | **Solid Duct Fastener XMK** | **Louvre Shutter XLG** |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | 92248AA | | | 91970AA | |
| 600mm | | | | | 91971AA | |

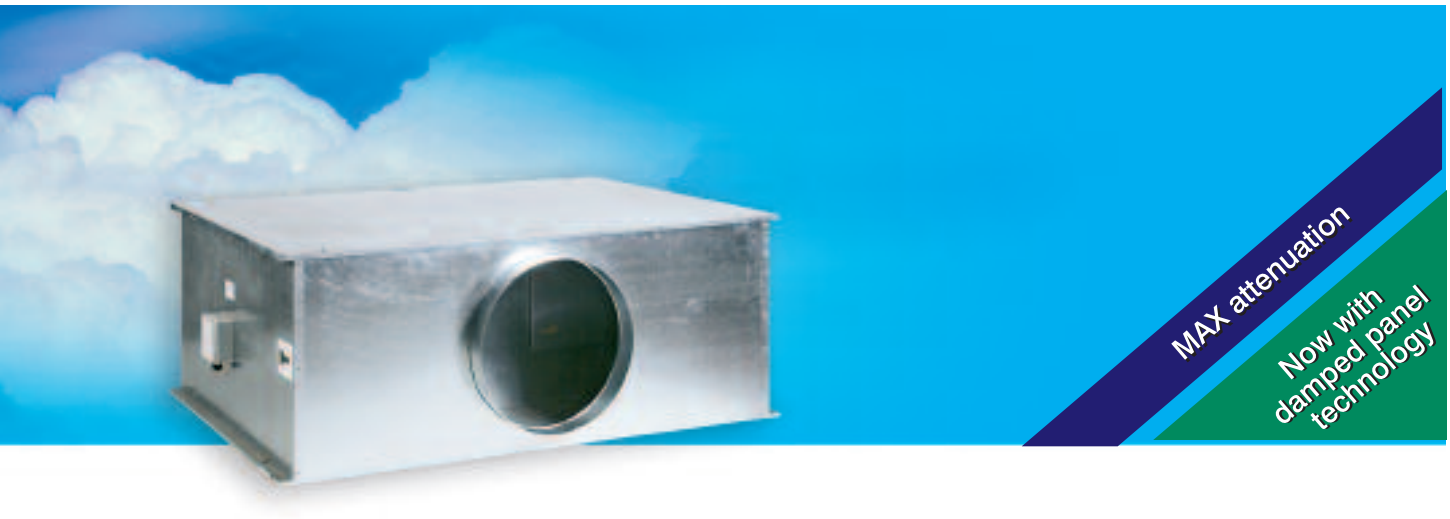
| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Grille Box GB** | **Egg-Crate Ceiling Grille (Silver) CG** | **Spigot Plate/ Damper FWS** | **Four Way Ceiling Diffuser FW** | **Circular Air Valve CAV** | **Aluminium Flexible Ducting Xflex ALU** |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | | 91430AA + 91424AA | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | | 91431AA + 91424AA | | | 91438AA |
| 250mm | 89680AA + 89532AA | | 91432AA + 91425AA | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | | 91440AA |
| 400mm | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |

# Xpelair HiFlo CMAX Twin XTFA

## Attenuated inline run and standby fans with flow switch

Flowswitch

NEW




### Key features

| | |
|---|---|
| Application: | **Attenuated twin inline** |
| Type: | **Run and standby** |
| Control options: | **5 step transformer speed controller, Auto changeover** |

CE 2 Year Guarantee

### The Range

The Xpelair **HiFlo CMAX Twin** range of inline fans is a system model line up of fans for use in ducting applications where high performance is required.

Suitable for light commercial and industrial applications such as schools, shops, sports complexes, offices, pubs and restaurants, the compact design of the range allows the fans to easily be accommodated above a suspended ceiling or floor void using the mounting points provided.

The range is high performance, and uses low noise level motors.

All models can be mounted with the cover upwards or inverted.

The HiFlo range is suitable for ambient temperatures from -30°C to +50°C (dependant on model) and an optional speed controller is available.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

**Fan Deck**
Incorporates 'damped panel technology' developed to considerably reduce fan deck resonance. Xpelair's visco-elastic polymer laminate construction is particularly effective at reducing resonance in the lower frequency octave bands.

**MAX attenuation**
CFC and HFC-free, class 'O' open cell expanded foam, for thermal and acoustic purposes, with a maximum thermal conductivity of 0.035W/mK, fully in compliance with London Borough and CAA airport authority flammability and toxicity requirements. Adhesive is a light and ageing resistant modified acrylic synthetic resin with high temperature tolerance.

**Fans**
Single-inlet, single width, or double-inlet, double-width, centrifugal type with high efficiency, low noise, forward-curved, multiblade galvanised sheet steel impellers housed within galvanised steel scrolls. Motor/impeller assemblies are statically and dynamically balanced, in two planes, in accordance with BS 5265, Part 1, 1979 to G2.5. Fans are mounted individually on to fan decks to facilitate easy removal.

**Motors**
Totally enclosed, high-efficiency, split-capacitor type with power factors of better than 0.9. Maximum ambient operating temp. of at least 40°C. (Motors rated to 50ºC are available to special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Thermal contactors are incorporated into the windings to ensure overload protection. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired via an external IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity.

**Controllers**
Auto changeover controller with duty sharing run and standby is used with the models in this range. Suitable for use with 5 step transformer speed controller.

## Performance Data

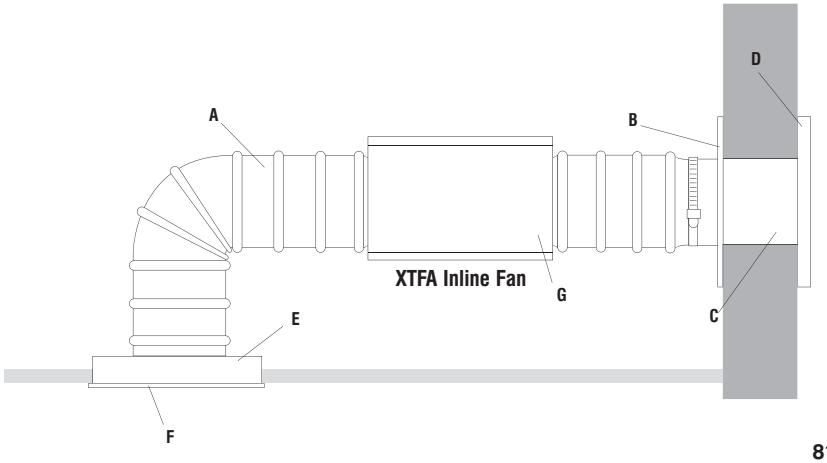
| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XTFA100** | **XTFA125** | **XTFA150** | **XTFA200** | **XTFA250** | **XTFA315/1** | **XTFA315/2** | **XTFA400/1** | **XTFA400/2** | **XTFA400/3** | **XTFA500/1** | **XTFA500/4** |
| Reference number | | 64030AA | 64031AA | 64032AA | 64033AA | 64035AA | 64036AA | 64668AA | 64037AA | 64038AA | 64060AA | 64061AA | 64064AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow (m³/s) | 0Pa | 0.070 | 0.125 | 0.190 | 0.240 | 0.530 | 0.580 | 0.700 | 0.720 | 1.050 | | 1.278 | 1.888 |
| | 50Pa | 0.065 | 0.120 | 0.185 | 0.225 | 0.520 | 0.567 | 0.680 | 0.700 | 1.025 | | 1.194 | 1.805 |
| | 100Pa | 0.060 | 0.115 | 0.180 | 0.210 | 0.496 | 0.546 | 0.660 | 0.680 | 0.985 | | 1.100 | 1.694 |
| | 150Pa | 0.056 | 0.110 | 0.170 | 0.193 | 0.460 | 0.510 | 0.640 | 0.660 | 0.950 | | 0.972 | 1.583 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.175 | 0.410 | 0.460 | 0.620 | 0.640 | 0.910 | 1.000 | 0.833 | 1.444 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.335 | 0.368 | 0.560 | 0.580 | 0.850 | 0.916 | 0.597 | 1.236 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | 0.220 | 0.222 | 0.515 | 0.530 | 0.798 | | | |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.465 | 0.475 | 0.750 | 0.860 | 0.195 | 0.777 |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.340 | 0.350 | 0.680 | | | |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.160 | 0.170 | 0.580 | 0.750 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.140 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.010 | 0.402 | | |
| | 450Pa | | | | | | | | | | 0.195 | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1200 | 1200 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 23 | 24 | 24 | 25 | 37 | 37 | 64 | 65 | 72 | 105 | 136 | 154 |

| | | Three phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XTFA500/2** | **XTFA500/3** | **XTFA500/5** | **XTFA600** |
| Reference number | | 64062AA | 64063AA | 64065AA | 64066AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow (m³/s) | 0Pa | 1.555 | | | |
| | 50Pa | 1.472 | | 1.945 | |
| | 100Pa | 1.388 | | 1.847 | |
| | 150Pa | 1.277 | | 1.740 | |
| | 200Pa | 1.170 | | 1.620 | 2.750 |
| | 250Pa | 1.000 | | 1.388 | 2.700 |
| | 300Pa | 0.777 | | 1.042 | 2.640 |
| | 350Pa | 0.111 | | 0.600 | 2.500 |
| | 400Pa | | 1.611 | | 2.222 |
| | 450Pa | | 1.527 | | 1.735 |
| | 500Pa | | 1.460 | | 0.666 |
| | 550Pa | | 1.389 | | 0.125 |
| | 600Pa | | 1.277 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (°C) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 136 | 136 | 140 | 226 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XTFA** range of inline run and standby fans. The installation diagram below shows a typical **XTFA** ducted installation and associated accessories.

EXTERNAL WALL



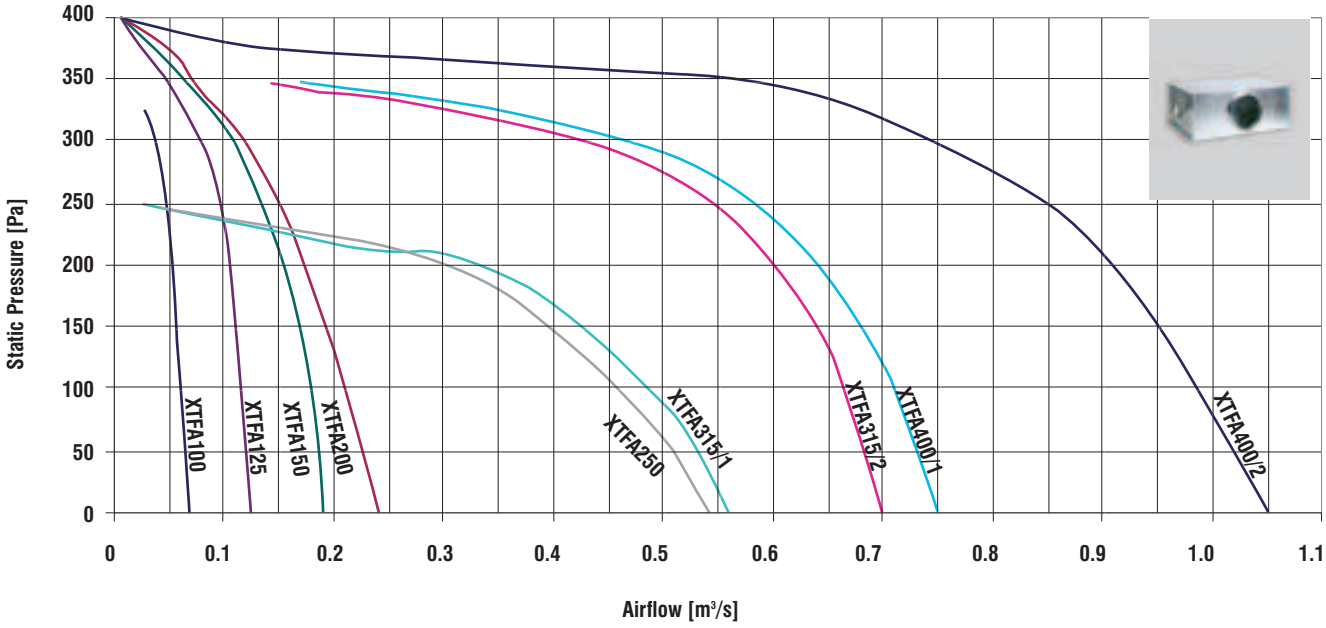

**A** Flexible ducting
**B** Spigot plate
**C** Wall duct
**D** External air operated louvre shutter
**E** Grille box
**F** Ceiling grille
**G** Worm drive clip

# Xpelair HiFlo CMAX Twin XTFA

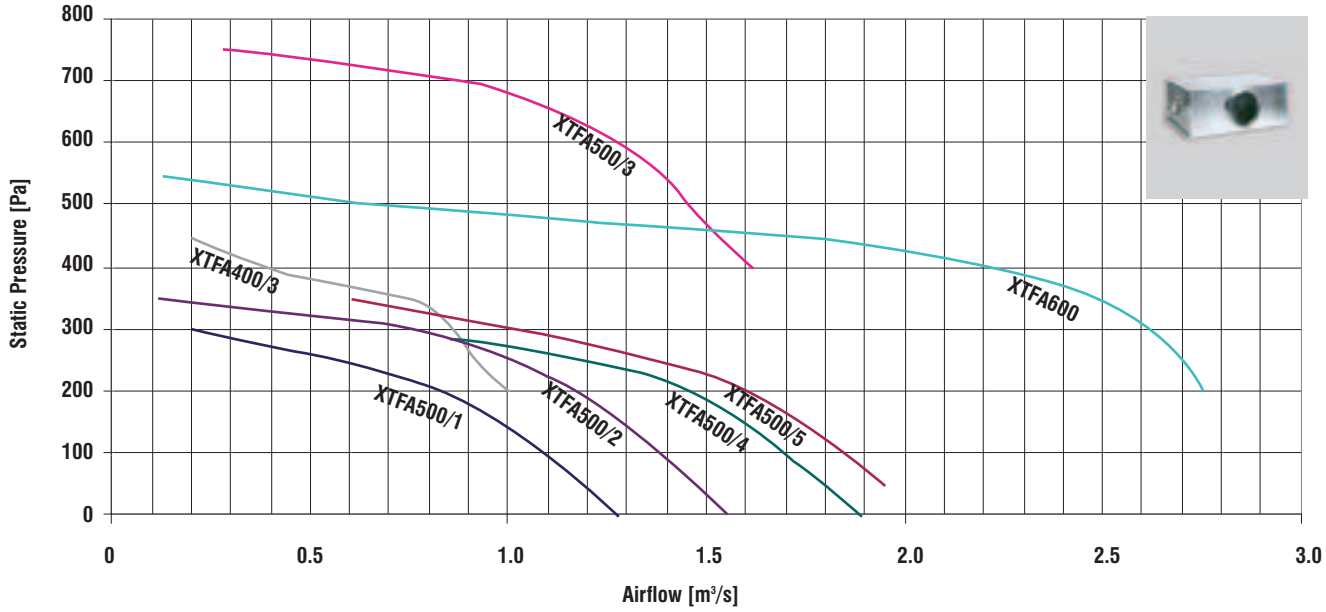
## Attenuated inline run and standby fans with flow switch

### Performance Graphs

XTFA100 to XTF400/2




XTFA400/3 to XTFA600



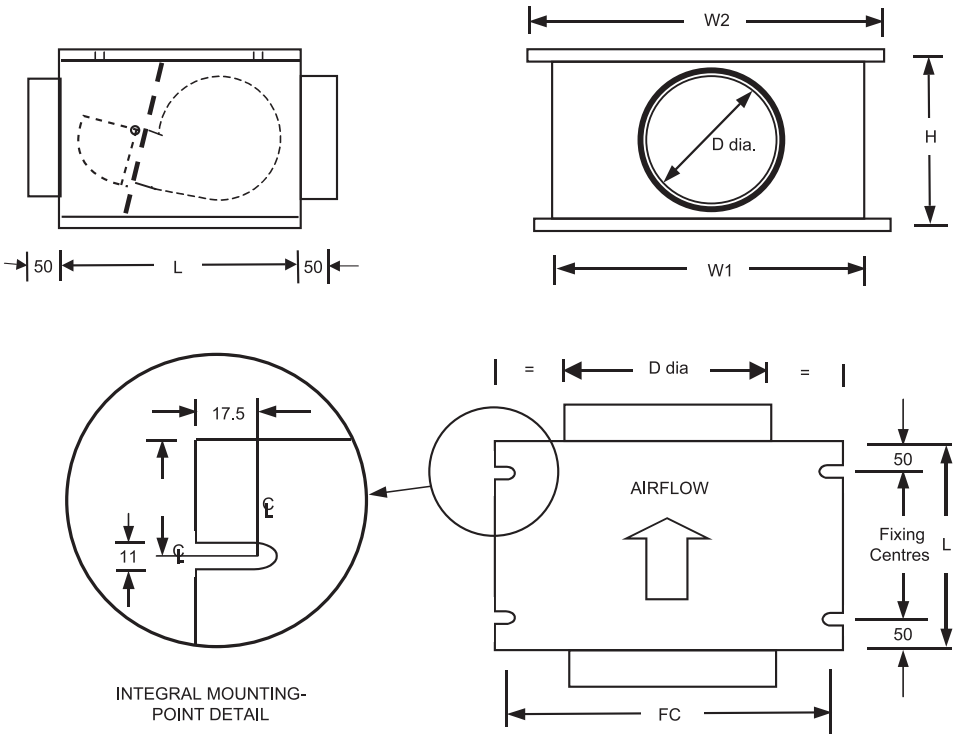

### Wiring Diagrams

Refer to pages 74 for wiring diagrams for twin fan with automatic duty sharing controller and 5 step transformer speed controller.

## Sound Power Data

| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| **XTFA100** | 54 | 56 | 55 | 54 | 46 | 45 | 42 | 35 | 39 |
| **XTFA125** | 49 | 52 | 50 | 46 | 37 | 36 | 34 | 27 | 30 |
| **XTFA150** | 51 | 53 | 51 | 48 | 39 | 38 | 36 | 29 | 31 |
| **XTFA200** | 54 | 55 | 53 | 50 | 41 | 40 | 38 | 31 | 32 |
| **XTFA250** | 59 | 60 | 58 | 56 | 46 | 45 | 43 | 35 | 40 |
| **XTFA315/1** | 60 | 61 | 59 | 57 | 47 | 46 | 43 | 35 | 41 |
| **XTFA315/2** | 63 | 62 | 63 | 64 | 59 | 58 | 55 | 50 | 40 |
| **XTFA400/1** | 65 | 64 | 65 | 66 | 61 | 60 | 57 | 52 | 42 |
| **XTFA400/2** | 70 | 69 | 69 | 70 | 65 | 64 | 62 | 57 | 49 |
| **XTFA400/3** | 74 | 73 | 72 | 71 | 65 | 64 | 63 | 61 | 57 |
| **XTFA500/1** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XTFA500/2** | 73 | 72 | 71 | 70 | 64 | 63 | 62 | 60 | 56 |
| **XTFA500/3** | 80 | 79 | 78 | 77 | 71 | 70 | 69 | 67 | 63 |
| **XTFA500/4** | 71 | 70 | 69 | 68 | 62 | 61 | 60 | 58 | 54 |
| **XTFA500/5** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XTFA600** | 78 | 77 | 76 | 75 | 69 | 68 | 67 | 65 | 61 |

## Dimensions

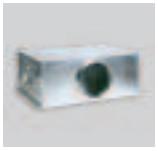



| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| **XTFA100** | 450 | 250 | 850 | 915 | 100 | 880 |
| **XTFA125** | 450 | 250 | 850 | 915 | 125 | 880 |
| **XTFA150** | 450 | 250 | 850 | 915 | 150 | 880 |
| **XTFA200** | 450 | 250 | 850 | 915 | 200 | 880 |
| **XTFA250** | 600 | 450 | 1250 | 1315 | 250 | 1280 |
| **XTFA315/1** | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| **XTFA315/2** | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| **XTFA400/1** | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| **XTFA400/2** | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| **XTFA400/3** | 900 | 500 | 1250 | 1315 | 400 | 1280 |
| **XTFA500/1** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XTFA500/2** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XTFA500/3** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XTFA500/4** | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| **XTFA500/5** | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| **XTFA600** | 1100 | 750 | 1650 | 1715 | 600 | 1680 |

# Xpelair HiFlo CMAX Twin XTFA

## Attenuated inline run and standby fans with flow switch

### Controllers

| | |  |  |  |  |
|---|---|---|---|---|---|
| | | 5 Step Transformer Speed Controller T1/T3 | Auto Changeover Controller with Manual Duty Share MAC-M | Auto Changeover Controller with Auto Duty Share MAC-A |
| Single Phase | XTFA100 | 91367AA | 64295AA | 64296AA |
| | XTFA125 | 91367AA | 64295AA | 64296AA |
| | XTFA150 | 91367AA | 64295AA | 64296AA |
| | XTFA200 | 91367AA | 64295AA | 64296AA |
| | XTFA250 | 91368AA | 64295AA | 64296AA |
| | XTFA315/1 | 91368AA | 64295AA | 64296AA |
| | XTFA315/2 | 91368AA | 64295AA | 64296AA |
| | XTFA400/1 | 91368AA | 64295AA | 64296AA |
| | XTFA400/2 | 91369AA | 64295AA | 64296AA |
| | XTFA400/3 | 91369AA | 64295AA | 64296AA |
| | XTFA500/1 | 91369AA | 64295AA | 64296AA |
| | XTFA500/4 | 91371AA | 64295AA | 64296AA |
| Three Phase | XTFA500/2 | 91363AA | 64295AA | 64296AA |
| | XTFA500/3 | 91364AA | 64295AA | 64296AA |
| | XTFA500/5 | 91363AA | 64295AA | 64296AA |
| | XTFA600 | 91365AA | 64295AA | 64296AA |

### Auto Changeover Switches

**MAC-M manual duty sharing controller with auto changeover on fan failure**
Allows manual selection of the 'duty' and 'standby' fans. Automatic changeover occurs when one of the fans fails.

The changeover panel incorporates a 'power on' indicator, and 'run' and 'fail' lights indicating fan operational status.

When 'Fan 1' is manually selected, the light sequence is:

Amber power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light OFF
Fan 2 green 'run' light OFF
Fan 2 red 'fail' light OFF

When 'Fan 2' is manually selected, the 'Fan 1' green 'run' light is OFF and the 'Fan 2' green 'run' light is ON.

When the automatic changeover panel switches to 'Fan 2' due to 'Fan 1' failure, the light sequence is:

Amber power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light ON
Fan 2 green 'run' light ON
Fan 2 red 'fail' light OFF

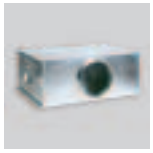
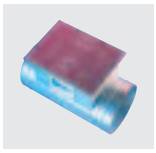
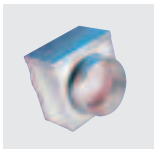
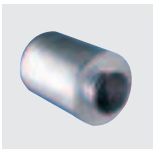
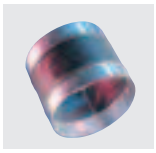
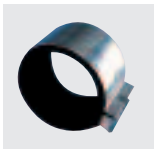
When 'Fan 1' is operational due to 'Fan 2' failure, the 'Fan 1' red 'fail' light is OFF and the 'Fan 2' red 'fail' light is ON.

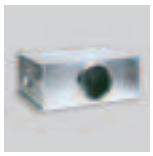
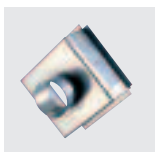
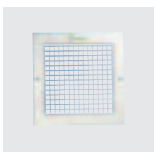
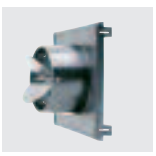
Fan 'failure' is via a very reliable airflow sensing flow switch device within the case. This gives automatic changeover and fan status indication on the control panel.

MAC-M manual duty sharing controller with auto changeover should be switched from 'Fan 1' run to 'Fan 2' run on a weekly cycle.

**MAC-A automatic duty sharing controller with auto changeover on fan failure**
Operates as MAC-M with the addition of automatic timed change of the 'duty' and 'standby' fans every 12 hours.

## Accessories

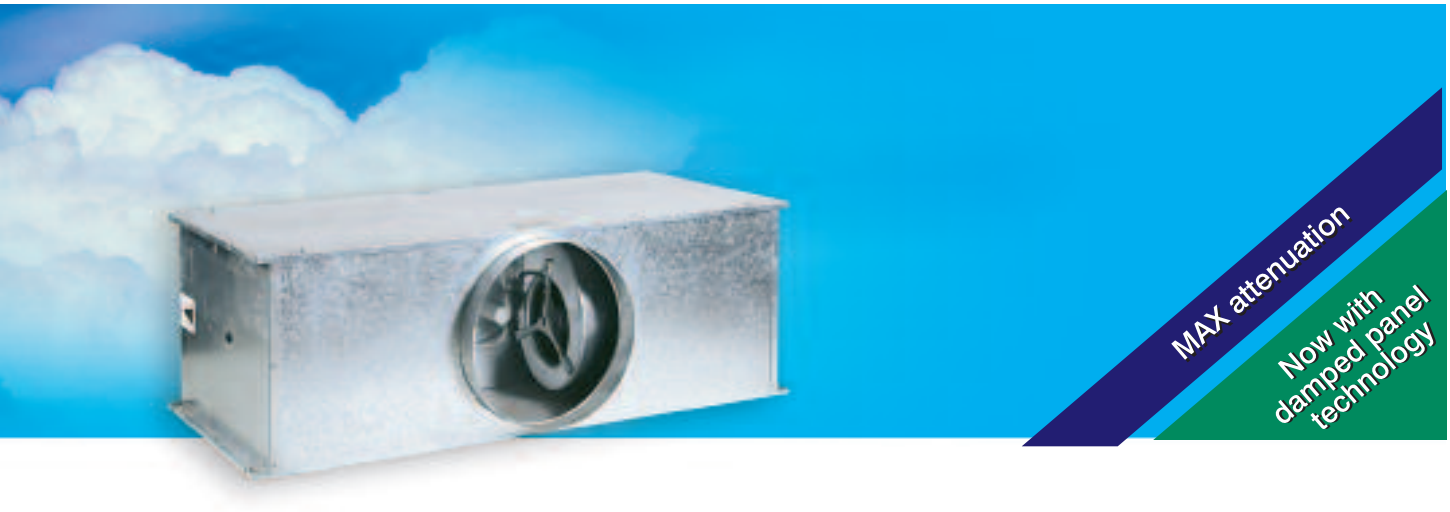
| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Inline Duct Heater IDH** | **Bag Filter Cassette CFC** | **Circular Silencer SIL** | **Flexible Connection FFC** | **Solid Duct Fastener XMK** | **Louvre Shutter XLG** |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | 92248AA | | | 91970AA | |
| 600mm | | | | | 91971AA | |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Grille Box GB** | **Egg-Crate Ceiling Grille (Silver) CG** | **Spigot Plate/ Damper FWS** | **Four Way Ceiling Diffuser FW** | **Circular Air Valve CAV** | **Aluminium Flexible Ducting Xflex ALU** |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | | 91430AA + 91424AA | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | | 91431AA + 91424AA | | | 91438AA |
| 250mm | 89680AA + 89532AA | | 91432AA + 91425AA | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | | 91440AA |
| 400mm | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |

# Xpelair HiFlo CMAX Twin XDFA

## Attenuated inline run and standby fans with motor sensing

Motor Sensing




### Key features

| | |
|---|---|
| Type: | **Attenuated twin inline** |
| Application: | **Run and standby** |
| Control options: | **Auto changeover** |

CE 2 Year Guarantee

### The Range

The Xpelair **HiFlo CMAX Twin** range of inline fans is a sixteen model line up of fans for use in ducting applications where high performance is required. Each fan combines innovative features to increase efficiency, reduce noise and make installation easier.

With models suitable for light commercial through to industrial applications such as schools, shops, sports complexes, offices, pubs and restaurants, the compact design allows the fans to be easily accommodated above a suspended ceiling or below a floor void using the mounting points provided.

All models can be mounted with the cover upwards or inverted.

### Specification

**Casings**
Unit casings are manufactured from best quality galvanised sheet steel with access from top or bottom. Reinforced slotted safety fixing points are incorporated to facilitate drop-rods or mounting bolts within overall unit width. All permanent fixings are rivetted and all removable items are retained via setscrews and nutserts. Fan mounting plate incorporates 'damped panel' technology and is easily removable via access panel.

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**Motors**
Totally enclosed, high-efficiency, split-capacitor type with power factors of better than 0.9. Maximum ambient operating temp. of at least 40°C. (Motors rated to 50ºC are available to special order.) Bearings are sealed-for-life, maintenance-free, ball bearing type with a minimum life expectancy of 50,000 hours under design operating conditions. Thermal contactors are incorporated into the windings to ensure overload protection. Insulation is to Class B or F with enclosure to IP44 or IP54.

Electrical supply 220-240V single phase 50Hz or 400-415V three phase 50Hz.

**Terminal Box**
Electrical connections are wired via an external IP54 terminal box, with removable cover, in accordance with I.E.E. 16th. Edition, (BS7671), and tested to ensure full earth continuity. Auto changeover with run and standby is used with this model.

**Controllers**
Auto changeover controller with duty sharing run and standby is used with the models in this range.

## Performance Data

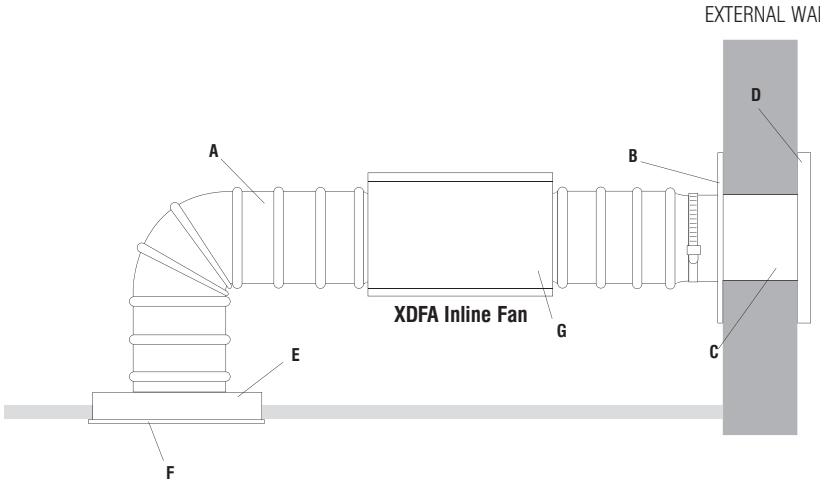
| | | Single Phase | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MODEL** | | **XDFA100** | **XDFA125** | **XDFA150** | **XDFA200** | **XDFA250** | **XDFA315/1** | **XDFA315/2** | **XDFA400/1** | **XDFA400/2** | **XDFA400/3** | **XDFA500/1** | **XDFA500/4** |
| Reference number | | 91398AA | 91399AA | 91400AA | 91401AA | 91402AA | 91403AA | 91404AA | 91405AA | 91406AA | 92127AA | 92128AA | 92131AA |
| Spigot diameter (mm) | | 100 | 125 | 150 | 200 | 250 | 315 | 315 | 400 | 400 | 400 | 500 | 500 |
| Airflow (m³/s) | 0Pa | 0.070 | 0.125 | 0.190 | 0.240 | 0.530 | 0.580 | 0.700 | 0.720 | 1.050 | | 1.278 | 1.888 |
| | 50Pa | 0.065 | 0.120 | 0.185 | 0.225 | 0.520 | 0.567 | 0.680 | 0.700 | 1.025 | | 1.194 | 1.805 |
| | 100Pa | 0.060 | 0.115 | 0.180 | 0.210 | 0.496 | 0.546 | 0.660 | 0.680 | 0.985 | | 1.100 | 1.694 |
| | 150Pa | 0.056 | 0.110 | 0.170 | 0.193 | 0.460 | 0.510 | 0.640 | 0.660 | 0.950 | | 0.972 | 1.583 |
| | 200Pa | 0.050 | 0.105 | 0.155 | 0.175 | 0.410 | 0.460 | 0.620 | 0.640 | 0.910 | 1.000 | 0.833 | 1.444 |
| | 250Pa | 0.047 | 0.095 | 0.135 | 0.150 | 0.335 | 0.368 | 0.560 | 0.580 | 0.850 | 0.916 | 0.597 | 1.236 |
| | 275Pa | 0.042 | 0.090 | 0.123 | 0.135 | 0.220 | 0.222 | 0.515 | 0.530 | 0.798 | | | |
| | 300Pa | 0.038 | 0.080 | 0.110 | 0.118 | | | 0.465 | 0.475 | 0.750 | 0.860 | 0.195 | 0.777 |
| | 325Pa | 0.028 | 0.065 | 0.088 | 0.098 | | | 0.340 | 0.350 | 0.680 | | | |
| | 350Pa | | 0.050 | 0.065 | 0.073 | | | 0.160 | 0.170 | 0.580 | 0.750 | | |
| | 375Pa | | 0.025 | 0.040 | 0.050 | | | | | 0.140 | | | |
| | 400Pa | | 0.004 | 0.006 | 0.010 | | | | | 0.010 | 0.402 | | |
| | 450Pa | | | | | | | | | | 0.195 | | |
| Nominal fan speed (rpm) | | 2150 | 1150 | 1150 | 1150 | 1200 | 1200 | 1100 | 1100 | 1210 | 1130 | 710 | 770 |
| Max electrical power (W) | | 88 | 195 | 195 | 195 | 360 | 360 | 700 | 700 | 1240 | 1050 | 1100 | 1700 |
| Full load current (A) | | 0.4 | 1.0 | 1.0 | 1.0 | 1.6 | 1.6 | 3.0 | 3.0 | 6.0 | 4.7 | 5.2 | 7.8 |
| Starting current (A) | | 1.0 | 3.0 | 3.0 | 3.0 | 4.5 | 4.5 | 7.5 | 7.5 | 16.0 | 8.8 | 9.0 | 10.0 |
| Motor insulation class | | B | B | B | B | B | B | B | B | F | F | F | F |
| IP rating | | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 | IP54 | IP54 | IP54 |
| Max operating temperature (ºC) | | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 40 | 40 | 40 |
| Weight (kg) | | 23 | 24 | 24 | 25 | 37 | 37 | 64 | 65 | 72 | 105 | 136 | 154 |

| | | Three phase | | | |
|---|---|---|---|---|---|
| **MODEL** | | **XDFA500/2** | **XDFA500/3** | **XDFA500/5** | **XDFA600** |
| Reference number | | 92129AA | 92130AA | 92132AA | 92133AA |
| Spigot diameter (mm) | | 500 | 500 | 500 | 600 |
| Airflow (m³/s) | 0Pa | 1.555 | | | |
| | 50Pa | 1.472 | | 1.945 | |
| | 100Pa | 1.388 | | 1.847 | |
| | 150Pa | 1.277 | | 1.740 | |
| | 200Pa | 1.170 | | 1.620 | 2.750 |
| | 250Pa | 1.000 | | 1.388 | 2.700 |
| | 300Pa | 0.777 | | 1.042 | 2.640 |
| | 350Pa | 0.111 | | 0.600 | 2.500 |
| | 400Pa | | 1.611 | | 2.222 |
| | 450Pa | | 1.527 | | 1.735 |
| | 500Pa | | 1.460 | | 0.666 |
| | 550Pa | | 1.389 | | 0.125 |
| | 600Pa | | 1.277 | | |
| | 650Pa | | 1.111 | | |
| | 700Pa | | 0.888 | | |
| | 750Pa | | 0.278 | | |
| Nominal fan speed (rpm) | | 800 | 1300 | 800 | 840 |
| Max electrical power (W) | | 1400 | 2600 | 1750 | 3700 |
| Full load current (A) | | 2.6 | 4.3 | 3.0 | 7.0 |
| Starting current (A) | | 11.0 | 17.5 | 11.0 | 20.0 |
| Motor insulation class | | F | F | F | F |
| IP rating | | IP54 | IP54 | IP54 | IP54 |
| Max operating temperature (ºC) | | 40 | 40 | 40 | 50 |
| Weight (kg) | | 136 | 136 | 140 | 226 |

## Installation

An extensive range of accessories are available to complete the installation of the Xpelair **XDFA** range of inline run and standby fans. The installation diagram below shows a typical **XDFA** ducted installation and associated accessories.

| | |
|---|---|
| **A** Flexible ducting | **E** Grille box |
| **B** Spigot plate | **F** Ceiling grille |
| **C** Wall duct | **G** Worm drive clip |
| **D** External air operated louvre shutter | |

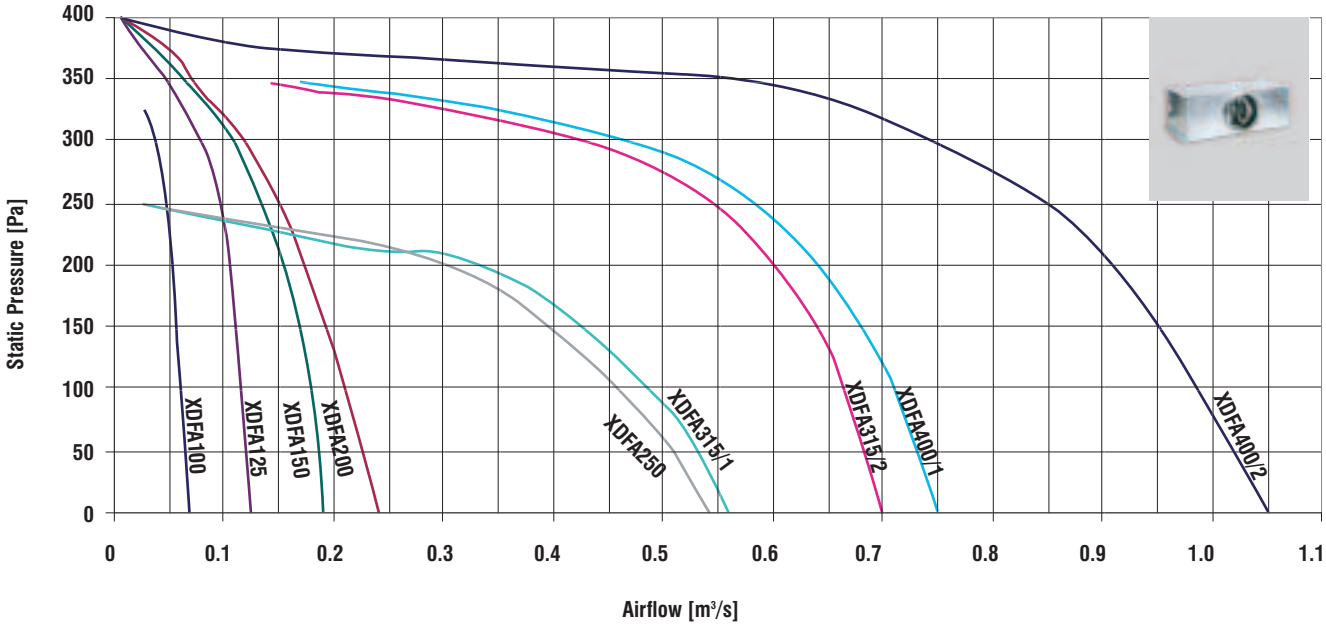


# Xpelair HiFlo CMAX Twin XDFA

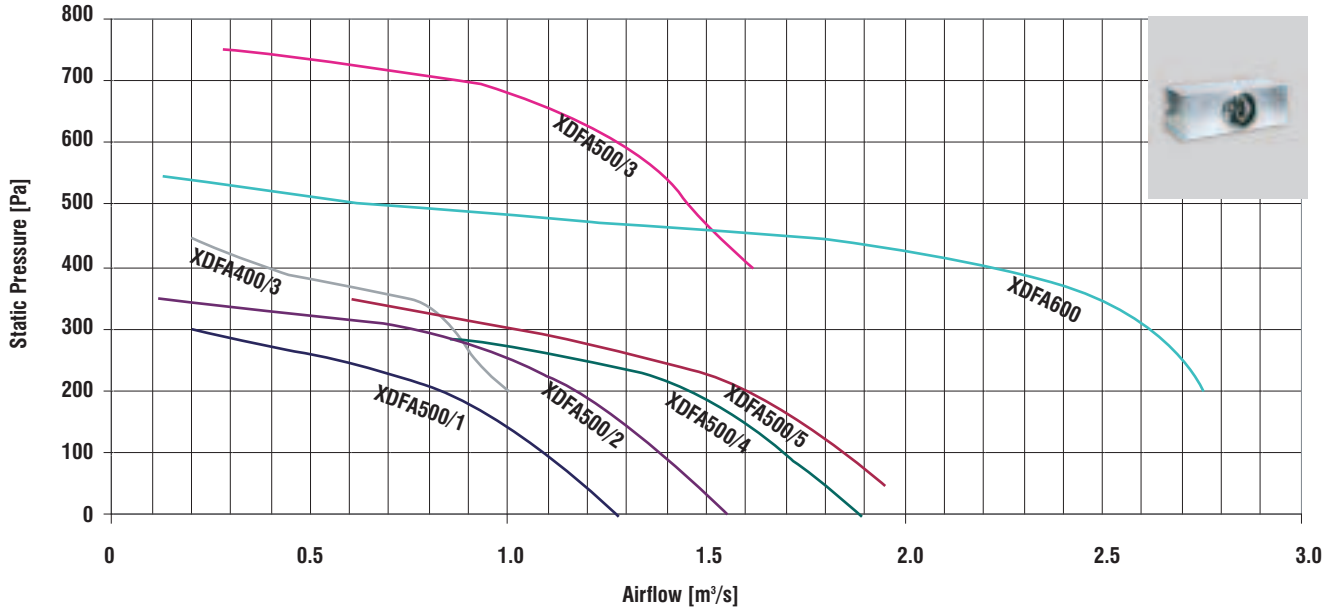
## Attenuated inline run and standby fans with motor sensing

### Performance Graphs

XDFA100 to XDFA400/2




XDFA400/3 to XDFA600



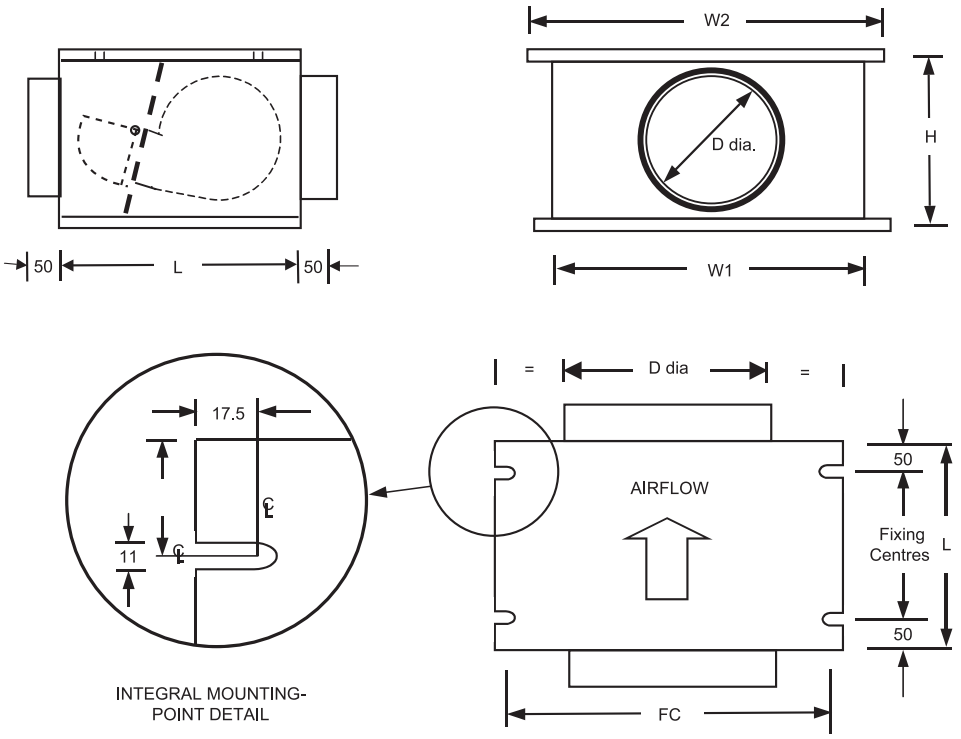

### Wiring Diagrams

Refer to pages 45 for wiring diagrams for twin fan with automatic duty sharing controller.

## Sound Power Data

| | 63Hz | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | dB(A)@3m |
|---|---|---|---|---|---|---|---|---|---|
| **XDFA100** | 54 | 56 | 55 | 54 | 46 | 45 | 42 | 35 | 39 |
| **XDFA125** | 49 | 52 | 50 | 46 | 37 | 36 | 34 | 27 | 30 |
| **XDFA150** | 51 | 53 | 51 | 48 | 39 | 38 | 36 | 29 | 31 |
| **XDFA200** | 54 | 55 | 53 | 50 | 41 | 40 | 38 | 31 | 32 |
| **XDFA250** | 59 | 60 | 58 | 56 | 46 | 45 | 43 | 35 | 40 |
| **XDFA315/1** | 60 | 61 | 59 | 57 | 47 | 46 | 43 | 35 | 41 |
| **XDFA315/2** | 63 | 62 | 63 | 64 | 59 | 58 | 55 | 50 | 40 |
| **XDFA400/1** | 65 | 64 | 65 | 66 | 61 | 60 | 57 | 52 | 42 |
| **XDFA400/2** | 70 | 69 | 69 | 70 | 65 | 64 | 62 | 57 | 49 |
| **XDFA400/3** | 74 | 73 | 72 | 71 | 65 | 64 | 63 | 61 | 57 |
| **XDFA500/1** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XDFA500/2** | 73 | 72 | 71 | 70 | 64 | 63 | 62 | 60 | 56 |
| **XDFA500/3** | 80 | 79 | 78 | 77 | 71 | 70 | 69 | 67 | 63 |
| **XDFA500/4** | 71 | 70 | 69 | 68 | 62 | 61 | 60 | 58 | 54 |
| **XDFA500/5** | 72 | 71 | 70 | 69 | 63 | 62 | 61 | 59 | 55 |
| **XDFA600** | 78 | 77 | 76 | 75 | 69 | 68 | 67 | 65 | 61 |

## Dimensions




| MODEL | L | H | W1 | W2 | D(dia.) | FC |
|---|---|---|---|---|---|---|
| **XDFA100** | 450 | 250 | 850 | 915 | 100 | 880 |
| **XDFA125** | 450 | 250 | 850 | 915 | 125 | 880 |
| **XDFA150** | 450 | 250 | 850 | 915 | 150 | 880 |
| **XDFA200** | 450 | 250 | 850 | 915 | 200 | 880 |
| **XDFA250** | 600 | 450 | 1250 | 1315 | 250 | 1280 |
| **XDFA315/1** | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| **XDFA315/2** | 600 | 450 | 1250 | 1315 | 315 | 1280 |
| **XDFA400/1** | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| **XDFA400/2** | 600 | 450 | 1250 | 1315 | 400 | 1280 |
| **XDFA400/3** | 900 | 500 | 1250 | 1315 | 400 | 1280 |
| **XDFA500/1** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XDFA500/2** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XDFA500/3** | 900 | 650 | 1250 | 1315 | 500 | 1280 |
| **XDFA500/4** | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| **XDFA500/5** | 900 | 650 | 1650 | 1715 | 500 | 1680 |
| **XDFA600** | 1100 | 750 | 1650 | 1715 | 600 | 1680 |

# Xpelair HiFlo CMAX Twin XDFA

## Attenuated inline run and standby fans with motor sensing

### Controllers

| | |  |  |  |
|---|---|---|---|---|
| | | | Auto Changeover Controller with Auto Duty Share ACO-1 | Auto Changeover Controller with Auto Duty Share ACO-3 |
| Single Phase | XDFA100 | | 72774AA | N/A |
| | XDFA125 | | 72774AA | N/A |
| | XDFA150 | | 72774AA | N/A |
| | XDFA200 | | 72774AA | N/A |
| | XDFA250 | | 72774AA | N/A |
| | XDFA315/1 | | 72774AA | N/A |
| | XDFA315/2 | | 72774AA | N/A |
| | XDFA400/1 | | 72774AA | N/A |
| | XDFA400/2 | | N/A | N/A |
| | XDFA400/3 | | 72774AA | N/A |
| | XDFA500/1 | | N/A | N/A |
| | XDFA500/4 | | N/A | N/A |
| Three Phase | XDFA500/2 | | N/A | 72775AA |
| | XDFA500/3 | | N/A | N/A |
| | XDFA500/5 | | N/A | 72775AA |
| | XDFA600 | | N/A | N/A |

### Auto Changeover Switches

**ACO-1 and ACO-3 automatic duty sharing controllers with auto changeover on fan failure**
Provides automatic timed change of the 'duty' and 'standby' fans every 12 hours. Automatic changeover also occurs when one of the fans fails.

The changeover panel incorporates a 'power on' indicator, and 'run' and 'fail' lights indicating fan operational status.

When the ACO is switched on, 'Fan 1' operates and the light sequence is:

Red power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light OFF
Fan 2 green 'run' light OFF
Fan 2 red 'fail' light OFF

When 'Fan 2' is automatically selected, the 'Fan 1' green 'run' light is OFF and the 'Fan 2' green 'run' light is ON.

When the automatic changeover panel switches to 'Fan 2' due to 'Fan 1' failure, the light sequence is:

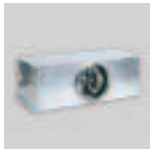
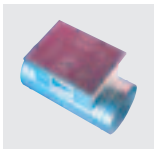
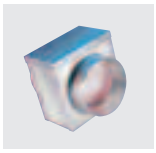
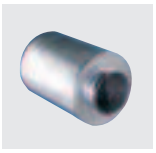
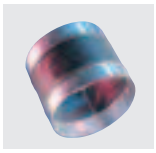
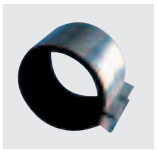
Red power light ON
Fan 1 green 'run' light ON
Fan 1 red 'fail' light ON
Fan 2 green 'run' light ON
Fan 2 red 'fail' light OFF

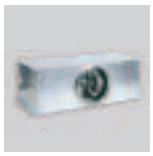
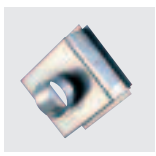
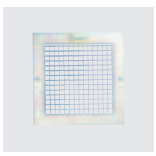
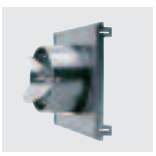
When 'Fan 1' is operational due to 'Fan 2' failure, the 'Fan 1' red 'fail' light is OFF and the 'Fan 2' red 'fail' light is ON.

Fan 'failure' is via a very reliable airflow sensing flow switch device within the case. This gives automatic changeover and fan status indication on the control panel.

Available in single phase (ACO-1) and three phase (ACO-3) versions.


## Accessories

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Inline Duct Heater IDH** | **Bag Filter Cassette CFC** | **Circular Silencer SIL** | **Flexible Connection FFC** | **Solid Duct Fastener XMK** | **Louvre Shutter XLG** |
| 100mm | 90270AA | | 89837AA | | 89618AA | 89691AA |
| 125mm | 90271AA | 90285AA | 89838AA | 90297AA | 89619AA | 89692AA |
| 150mm | 90272AA | 90286AA | 89839AA | 90298AA | 89620AA | 89693AA |
| 200mm | 90273AA | 90287AA | 89840AA | 90299AA | 89621AA | 89694AA |
| 250mm | 90274AA | 90288AA | 89841AA | 90300AA | 89622AA | 89695AA |
| 315mm | 90275AA | 90289AA | 89842AA | 90301AA | 89623AA | 89696AA |
| 400mm | 90276AA | 90290AA | | 90302AA | 90293AA | 90294AA |
| 500mm | 90277AA | 92248AA | | | 91970AA | |
| 600mm | | | | | 91971AA | |

| |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| **Duct Diameter** | **Grille Box GB** | **Egg-Crate Ceiling Grille (Silver) CG** | **Spigot Plate/ Damper FWS** | **Four Way Ceiling Diffuser FW** | **Circular Air Valve CAV** | **Aluminium Flexible Ducting Xflex ALU** |
| 100mm | 89676AA + 89675AA | | | | 89682AA | 91435AA |
| 125mm | 89677AA + 89675AA | | | | 91490AA | 91436AA |
| 150mm | 89678AA + 89675AA | | 91430AA + 91424AA | | 89683AA | 91437AA |
| 200mm | 89679AA + 89532AA | | 91431AA + 91424AA | | | 91438AA |
| 250mm | 89680AA + 89532AA | | 91432AA + 91425AA | | | 91439AA |
| 315mm | 89681AA + 89533AA<br>89828AA + 89827AA<br>90296AA + 90295AA | | 91456AA + 91426AA | | | 91440AA |
| 400mm | | | 91433AA + 91427AA<br>91434AA + 91428AA | | | 91441AA |
| 500mm | | | | | | |
| 600mm | | | | | | |