

Xpelair Whispair

Commercial ceiling fan range



Key features

Type: **Commercial quality cooling and destratification fans**

Application: **Commercial/Industrial**

Control options: **Range of optional controllers available**



The Range

Originally designed to provide a cool flow of air during warm periods, Xpelair Whispairs are a popular choice for winter applications too, where their use as heat destratification units can reduce heating costs. These commercial quality products are designed for use in public buildings, shops, theme pubs, restaurants, village halls, churches, hospitals, schools, farm buildings, factories, warehouses and other commercial buildings.

Whispairs are designed for worldwide use, including hot and humid conditions. The units are rated for continuous operation in commercial applications at temperatures up to 40°C and are suitable for upwards or downwards airflow. The triple bladed units are available in four sizes with swept diameters from 900 to 1500mm. Fan blades are steel and are supplied in matched sets. Whispairs are supplied with a choice of two lengths of suspension rod giving overall drops of 375 or 750mm.

In summer the atmosphere can become stifling hot. Whispairs can provide immediate relief by quietly delivering a continuous cooling breeze over a wide area. To maximise the benefit it is good practice to introduce fresh air into the area.

In winter stratification will naturally occur in a room as hot air rises to ceiling level (or the apex

of the roof) and cooler air sinks to ground level. Xpelair Whispairs will effectively destratify the hot air which gathers at ceiling height by pushing it downwards to mix with cooler air nearer to ground level, thus providing a more uniform temperature profile from floor to ceiling. This results in reduced heating costs as all the hot air does not gather at ceiling height, and thermal losses are reduced. The units should be set for downward airflow at low speed for optimum effect.

The optional Xpelair Automatic temperature sensor control system can automatically compare high and low level temperatures and ensure that the fans are operated to maximise energy efficiency. The controller should be sited where the ambient is less than 35°C, with the two sensors fitted at high and low level and connected using the cables supplied. In summer the control knob can be used to manually override the sensors. For no-frills speed control the Xpelair Whispair controllers are available for the control of a single fan or groups of up to 6 fans.

All Whispairs have integral anti-vibration bobbins and a continuously rated capacitor start and run external rotor motor. The motor incorporates two sets of caged ball bearings for extra long life.

Specification

Construction

Whispair Sweep Fans are available in four diameters: 900mm, 1200mm, 1400mm, and 1500mm each packed with two downrod lengths, 375mm/750mm, to cater for different ceiling heights. The fan is suspended from the ceiling using a ceiling anchor and suspension rod with integral anti-vibration bobbin using secure fixings.

Blades and Downrods

The blades and downrods are manufacture in steel and powder coated in white finish for suitability for high humidity environments. Top and bottom covers are in white polymer.

Motor

External rotor motor design. Continuously rated capacitor start and run. The design features two sets of caged ball bearings ensuring a long maintenance free life. Rated for use in hot and humid conditions up to 40C. Designed to be suitable both upward and downward air circulation. Using appropriate Xpelair controllers. Suitable for auto destratification systems using an Xpelair Automatic temperature sensor control system.

Control

Single and Group electronic controllers are available. For quietest operation Transformer controllers such as WAC1 is recommended.

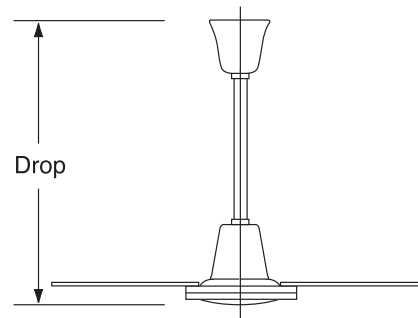
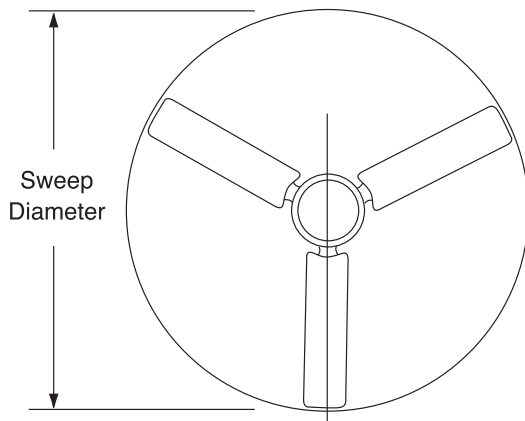
Electrical supply 220-240V single phase 50Hz.

Performance

MODEL	NWAN36	NWAN48	NWAN56	NWAN60
Reference number	90409AW	90410AW	90411AW	90412AW
Swept diameter (mm)	900	1200	1400	1500
Reversible operation	■	■	■	■
Maximum speed (rpm)	350	310	280	260
Airflow (m³/h)	8761	10890	12474	13959
Air delivery (m³/s)	2.43	3.03	3.47	3.88
Max electrical power (W)	50	65	65	65
Overall drop options (mm)	375/750	375/750	375/750	375/750
Weight (kg)*	6.5	6.5	6.5	6.5

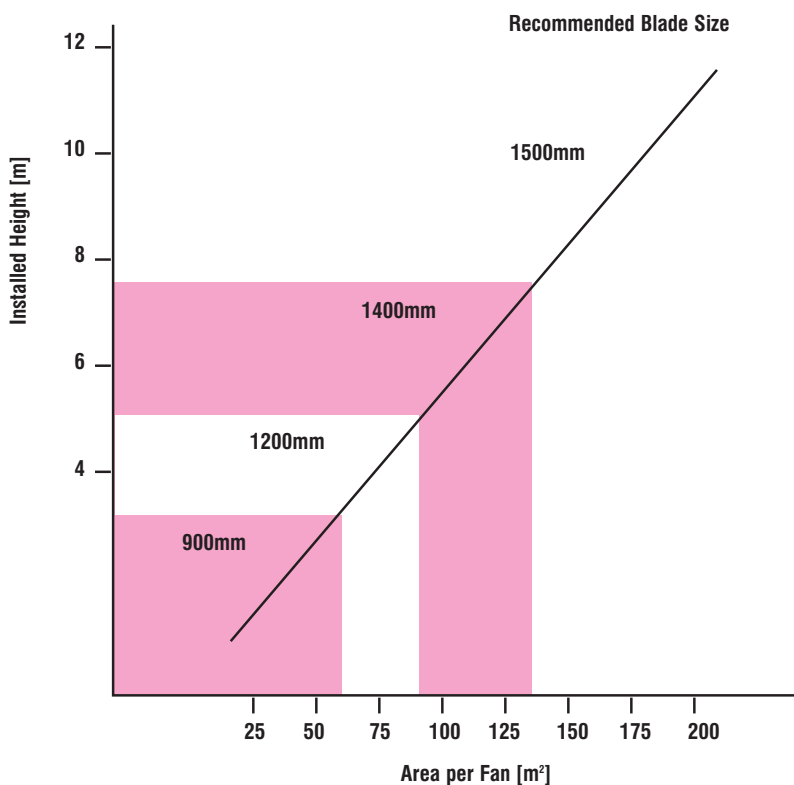
*All models 6.5kg with marginal weight variance according to swept diameter

Dimensions



	Dimensions (mm)			
	NWAN36	NWAN48	NWAN56	NWAN60
Sweep Diameter	900	1200	1400	1500
Overall Drop	All models, ceiling to bottom of fan: 375 or 750 (two down rods supplied)			

Whispair Selection Graph



Correct selection and siting of the appropriate Whispair is essential to obtain optimum air displacement.

Room height minus 'drop' of fan gives the installed height, which is used to calculate the floor area covered per fan.

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Installation

Which fan diameter do I choose?

Whispair units are delivered with two suspension rods of 375 and 750mm length. Ideally the fan blade should be at 2700mm or more from the floor (but never less than 2400mm) and a minimum of 375mm from the ceiling. Minimum room height is 2.8 metres with 375mm drop or 3.2 metres with 750mm drop length.

Spacing will vary according to individual building layout. As a rule of thumb, in the majority of temperate climate applications Xpelair Whispairs

should be spaced 4500 - 6000mm between blade tips apart. In hot and humid applications this should be reduced by a third, and should be mounted as low as possible (min 2400mm). The units should be no closer than one and a half diameters from pillars and walls in order to avoid turbulence unbalancing the unit and causing it to sway. Check that the units are clear of lighting to avoid strobe effects.

When installing one fan, it is suggested that a NWAN56 fan is used as this provides adequate air displacement without high air velocity.

When installing more than one Sweep Fan ensure that the 3 blades packaged with the fan are fitted to that fan only, as they are matched as a set and must not be mixed with other blades. A speed controller is recommended particularly for multi unit installations.

Higher speed settings are recommended for maximum cooling effect in Summer, and low speeds in Winter to compensate for the upward convection of warm air without creating excessive air movement at working level.

Air Movement

Winter Heat Conservation

Warm air rises and is ultimately lost through the roof of a building. The amount of heat lost depends on the degree of insulation in the roof. To maintain a comfortable working temperature, the building has to be heated disproportionately. To reduce energy costs, heat loss has to be kept to a minimum. Installing a sweep fan will check the upward convection of heat and distribute evenly (see fig. 2); consequently the warm air will be kept at working level longer.

Fig 1 - Illustrates a typical example of a building fitted with or without sweep fans. Without the fans to maintain a constant 18°C, the temperature at the top of the building could be substantially higher.

Installing sweep fans could reduce heating bills by 30%. Even with an insulated building, savings of 10% can be achieved.

Summer Cooling

To improve the working environment in the Summer when the atmosphere can be stifling hot, sweep fans operating on a high setting can provide immediate relief by cooling and moving the air over a wide area. To maximise the benefit, good ventilation is required to extract the stale air or alternatively bring fresh air into a room.

FIG 1 - Heat layers in a commercial environment

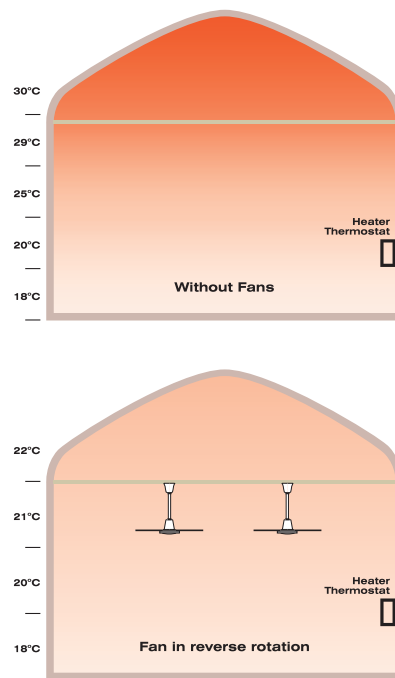
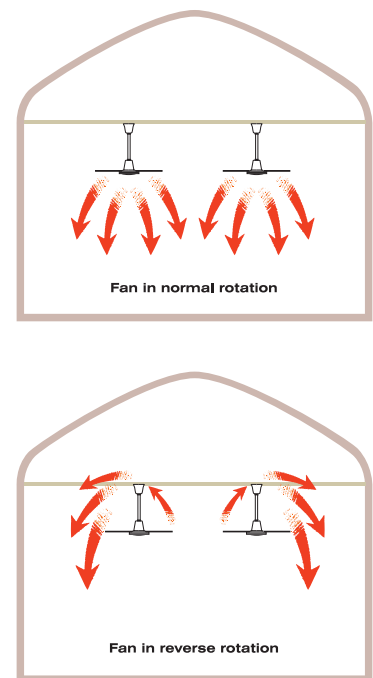







FIG 2 - Air Distribution pattern



Controllers

					
	Single Fan Transformer Speed Controller WAC1	Group Fan Electronic Speed Controller WAC6	Reversible Group Fan Electronic Speed Controller WAC6R	Automatic/Manual Temperature Sensor AWC	5 Step Transformer Speed Controller T1
NWAN36	21852AW	21853AW	21878AW	21857AW	91367AW*
NWAN48	21852AW	21853AW	21878AW	21857AW	91367AW*
NWAN56	21852AW	21853AW	21878AW	21857AW	91367AW*
NWAN60	21852AW	21853AW	21878AW	21857AW	91367AW*

*Can be used to control up to 5 Whispair fans. For more fans use 5 step controller with a higher current rating.

Automatic/manual temperature sensor AWC

Application

- Provides automatic or manual control of up to 10 Sweep fans.

Key Features

- Designed to minimise temperature variation, providing energy savings in Winter and Summer.
- Supplied with two sensors for high/low level temperature measurement.
- Automatic or manual operation.
- Switch to provide either up or downward air movement.
- Fan running indicator.
- Controller can be surface or recess mounted.
- 208mm x 86mm.
- 2 year guarantee (UK).

Operation

Automatic Operation - Energy Saving

The fan speed varies automatically between the preset min and max values adjusting to the difference in high and low room temperature.

Manual Operation - Summer Cooling

The fan speed varies according to the position of the control knob, irrespective of the sensor.

Installation

- Do not site where ambient temperature is likely to exceed 35°C.
- The high level sensor should be mounted above the fan and the low level within 1m of the controller.
- Sensors mounted horizontally without touching walls or ceilings.

Length of cable supplied.

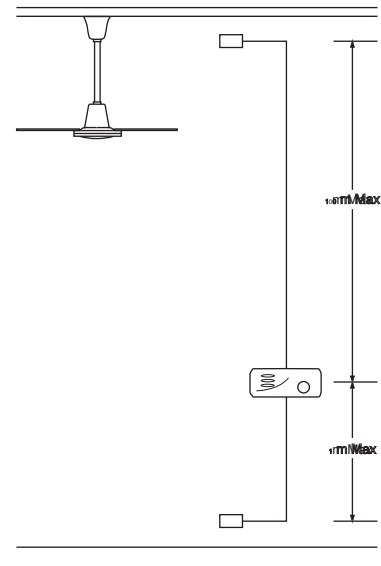
Low sensor - 1 metre

High sensor - 10 metres

Power rating: 600 watts

Dimensions

Height = 194mm
Width = 92mm
Depth = 45mm



Wiring Diagram

