



# LOWERING THE COST OF HIGH CEILINGS™

in partnership with



The Carbon Trust recommends destratification as an effective energy-saving strategy.\*



# WHY CHOOSE ZOO FANS?™

## Fast Payback

ZOO Fans create even temperatures from floor-to-ceiling and wall-to-wall that make it easier and more efficient to heat or cool a building. HVAC systems run less and energy costs go down. Noticeably improve comfort and watch productivity and sales increase. Typical payback periods of 1-3 years. Most of the ROI occurs in less than 2 years.

## Environmentally Conscious

ZOO Fans will improve air circulation and thermal comfort in new and existing facilities. With ZOO Fans you can use less energy, service and replace HVAC systems less often and, reduce or eliminate ducting; these are all good ways to reduce carbon footprint. Visit our website to see the many ways ZOO Fans can contribute to SBEM and energy efficient funding.

## Small fans, big savings!

Pound for pound, ZOO Fans are the most efficient and effective small destratification fans on the market. Rigorous independent testing proves that ZOO Fans use less energy to move air than the competition—that means fewer fans, lower installation costs, and lower operating costs.



## These fans go where others won't

They're easy to install around obstructions such as lighting or overhead cranes. The directed column of air is perfect for aisles or avoiding sensitive areas, and ZOO Fans' enclosed housing will never cause a strobe effect with lighting or interfere with fire suppression equipment.

## Keep them safe, make them happy

Warm-up the floor and help keep it dry, reduce condensation on equipment, eliminate hot and cold spots. Relaxed, comfortable people work more, play more, buy more—and smile more!

**Improve air circulation in almost any building—  
heated, air-conditioned, or not conditioned at all.**



Overheating results in significantly more energy consumption than necessary and usually creates hot and cold spots in a building.

**A ZOO FAN CREATES A GENTLE,  
CONCISE COLUMN OF AIR  
THAT BRINGS WARM AIR DOWN  
TO FLOOR LEVEL, DESTRAFIFIES  
THE SPACE AND REDUCES THE  
TEMPERATURE DIFFERENTIAL  
TO AS LOW AS 1° OVERALL.**

## OPEN CEILING

- Ceilings from 2.5m to 30m
- Perfect for aisles
- Manual or BMS variable speed control
- Concise column of air is easy to direct
- Third-party tested in an AMCA-certified lab
- Innovative, patented blade design delivers unmatched efficiency and performance
- Includes fast-locking hardware for quick and easy installation—6X faster than traditional methods



## DROP CEILING

- Ceilings from 2.5m to 15m
- Blends seamlessly with existing fixtures
- Quiet operation, Energy Star® rated motors
- Manual or BMS variable speed control
- Does not interfere with existing HVAC system
- Eliminates the need for space heaters
- Specially designed acoustic package available for silent operation in sound-sensitive settings



## ZOO FAN BENEFITS...

Raise  
Productivity

Lower  
Energy  
Costs

Improve  
Comfort

Increase  
Sales



# ZOO FAN SDF

## De-stratification Ceiling Mounted Fan

### DESCRIPTION

The stylish ZOO (Zone Of Occupancy) Fan de-stratifies by producing a gentle, concise column of air that draws warm air from the ceiling and forces it down to floor level. By doing this it helps create a more pleasant and comfortable indoor environment for workers and customers. It can also help to lower a building's operating costs by reducing the energy consumption of a heating system in cooler weather. Available in 2 sizes, 250mm and 300mm.

### TYPICAL APPLICATIONS

Ideal for buildings that are heated and have high ceilings such as warehouses, airports, churches, school halls, green houses, and shopping centres. Particularly effective when used in aisles because of their narrow band of air and variable speed control motor that provides airflow adjustment. Can be also used as a quiet and unobtrusive cooling fan in warmer weather.

### FEATURES

- Helps create a more productive, more comfortable environment that has the potential to reduce energy consumption.
- Can be installed so its airflow avoids or targets areas.
- Adjustable airflow using a VA speed controller.
- Model with finger guards on inlet and outlet available (See Additional Information). Codes: ZFH30G, ZFH60G.
- Pivoting handle allows quick change to airflow direction.
- Fire resistant (5VB) UV-treated PC ABS plastic.
- Fitted with Gripple attachments that make it quick and easy to install.

### CONSTRUCTION

UV-treated PC ABS plastic housing that is fire resistant (5VB). Fitted with an easy to reach IP54 terminal box.

### MOTOR

Type - external rotor, squirrel cage induction motor.  
Electricity supply - 220-240V, single-phase, 50/60Hz.  
Ball Bearing - sealed for life.  
Speed-controllable.  
Motor protection IP54.

### INTERNAL THERMAL PROTECTION

Auto-reset thermal protection

### TESTING

Airflow tests to DIN24166, Class1  
Noise tests to DIN3745, Class1

### ADDITIONAL INFORMATION

Finger guards must be fitted to fans if being mounted less than 2.1 metres from floor level.

### SUGGESTED SPECIFICATION

The de-stratification fans shall be of the Zoo (Zone Of Occupancy) Series as supplied by Elta Fans and be of the model number shown on the schedule/drawings. They shall be constructed from fire resistant (5VB), UV-treated PC ABS plastic and include a robust pivoting handle. They shall be fitted with a speed controllable motor and an IP54 terminal box. Wire finger guards (if fitted) shall be of zinc plated wire. All models shall be fully tested to DIN24166, Class1 for airflow and DIN3745, Class1 for noise. IP54. See pages O-2/3 for details on these motors.

### VERSATILE & EFFECTIVE

ZOO Fans move air within a narrow, easily discernible column and can be installed to target specific areas, such as workstations, or to avoid particular areas.

The difference in temperature between the floor and the ceiling can be significant: 0.25°C to 0.5°C per 300mm, or more, above 1.5m. The fans are simple to angle or rotate for infinite adjustment.

### EASY TO CONTROL

Operate individually or together in zones.

BMS integration available.

Variable speed control allows fine tuning of airflow for ceiling.

heights from 2.6m to 30m or more.

# ZOO FAN SDF

## Performance, SFP & Electrical Data

SINGLE Phase - 200V to 277V / 50Hz or 60Hz

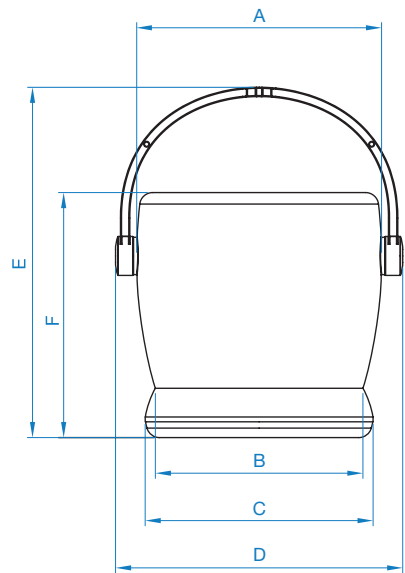
Model Number	Fan Size (mm)	Fan Speed rev/sec	Avg. dB(A) @ 3m		Free Air m³/s	Volts	kW	Amps	Max Operating Temp. °C	App Wt. kg
ZFH30(G)	250	23	Inlet	37	0.27	230	0.05	0.24	55	7
			Outlet	38						
ZFH60(G)	300	21	Inlet	43	0.53	230	0.09	0.38	55	9
			Outlet	42						

Exempt from ErP of the European Parliament. Fan data in accordance with ErP 327/2011 of the European Parliament. Measurement category used to determine energy efficiency: A. The overall A-weighted sound pressure level is at a distance of 3m with spherical free-field propagation. It is expressed in dB re-20µPa and is presented for comparative purposes only. Data provided at standard air density of 1.2 kg/m³. Peak Amps @ 400V / 3Ph / 50Hz.

Elta Fans Limited has a policy of continuous product development and improvement and therefore reserves the right to supply products which may differ from those illustrated and described in this publication. Confirmation of dimensions and data will be supplied on request.

# ZOO FAN SDF

## Dimensional Data



Product Code	A	B	C	D	E	F	Weight kg
ZFH30	359	300	352	445	545	375	6.8
ZFH60	452	367	421	533	656	460	10.5

Dimensions are in mm.

# ZOO FAN SDF

## Selecting a Zoo Fan

The calculations for destratification are worked out using the volume of air within the area, rather than the floor area.

1. Calculate volume in metres by multiplying the length, width and average height:

$$\text{Length} \times \text{Width} \times \text{Average Height} = \text{Volume in m}^3$$

2. Next, determine which fan to use based on ceiling height. ZOO Fans are currently manufactured in two sizes:

### ZFH30

AC: 0.265m<sup>3</sup>/s, EC: 0.423m<sup>3</sup>/s. Applications up to 9m height.

### ZFH60

AC: 0.532m<sup>3</sup>/s, EC: 0.656m<sup>3</sup>/s. Applications up to 20m height.

3. After selecting the fan size you are going to use (SDF250 or SDF300), use the following formula:

$$\text{Volume m}^3 \div 3600 \div \text{m}^3/\text{s} = \text{number of fans to install}$$

Volume of the space in m<sup>3</sup> ÷ 3600 (seconds in an hour) ÷ m<sup>3</sup>/s (of the fan selected) = the number of fans that are required to achieve one (1) air turn in one (1) hour.

Every ZOO Fan is variable-speed controllable and can be angled easily, if need be, to direct the flow. This allows for ease of installation and control across a broad range of applications. By simply adjusting the speed of the fan, the two sizes and models shown above can effectively cover ceiling heights from 3m to 20m.

In most cases it is best to use the SDF250 for ceiling heights up to 9m and the SDF300 for anything higher than 9m (see 'Other Considerations' for additional information).

## EXAMPLE

1. A big box store with a length of 75m, 50m width and a height of 7m has the following volume:

$$75 \times 50 \times 7 = \text{Volume } 26,250\text{m}^3$$

2. As the ceiling height is less than 9m the SDF250 AC can be used:

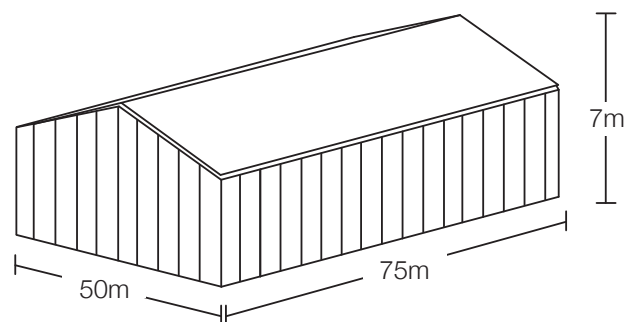
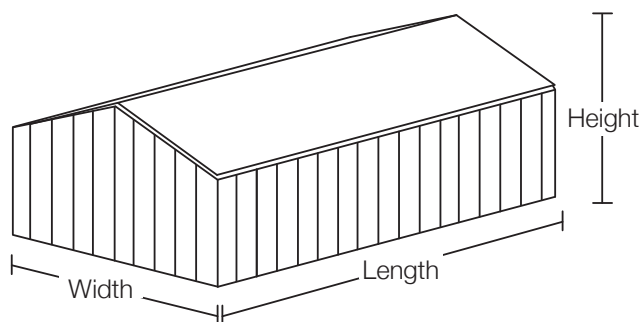
### ZFH30

0.265m<sup>3</sup>/s. Applications up to 9m height.

3. Using the formula and rounding the number up, it shows 28 AC SDF250 fans would be required:

$$26,250 \div 3600 \div 0.265 = 27.52$$

**Other Considerations:** There are some instances where you may consider the 300mm unit for lower ceiling heights. For example, with a ceiling height of 8m in a warehouse that is not constantly occupied, or where racking system and overhead truck doors are evident, you would select the 300mm or EC model to have the option of delivering a higher volume of air at floor level. You would also select the 300mm model for applications where you want to use the fans for spot cooling. In a more constantly occupied space where your ceiling height is 9m or less, and higher air speeds might cause discomfort for the occupants, it's preferable to use the SDF200. Examples would be a grocery store or a car showroom. This would create less draught and still destratify the space effectively.



# WHAT'S YOUR **ZOO**? **ZONE OF OCCUPANCY**



**ZOO Fans gently mix the air, eliminating hot and cold spots. The temperature at floor level is much more comfortable and the HVAC systems run less.**

## Where to consider ZOO Fans

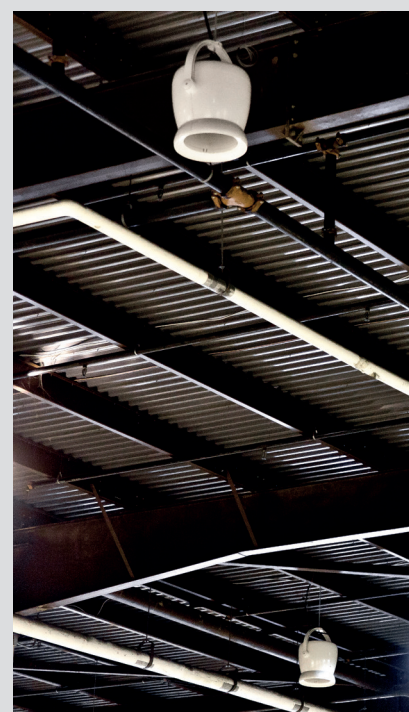
- > Retail
- > Warehouse
- > Distribution Centres
- > Hangars
- > Automotive Sales & Service
- > Fleet Maintenance
- > Gymnasiums
- > Athletic Facilities
- > Manufacturing
- > Offices
- > Theatres
- > Auditoriums
- > Medical Centres
- > Hospitals
- > Airports & Transportation Hubs

## Easy to control

- > Operate individually or together in Zones
- > BMS Integration Available
- > Variable speed control allows fine-tuning of airflow for ceiling heights from 2.5m to 30m or more, ensuring comfort and performance

## Built to last

- > Built with BAT (Best Available Technology) for high efficiency
- > Independently tested



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\*[www.carbontrust.com/resources/faqs/technology-and-energy-saving/energy-efficient-heating](http://www.carbontrust.com/resources/faqs/technology-and-energy-saving/energy-efficient-heating)

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