



ZOO FAN SDF

Destratification Ceiling
Mounted Fan

ZOO FAN SDF

Product Overview

- 2 standard sizes from 250mm to 300mm
- Air volume flow rates up to 0.593m³/s (AC) and 0.656m³/s (EC)
- High quality Ziehl-Abegg FE2owlet impeller
- Suitable for operating temperatures up to +70°C
- Fully speed controllable
- Available in 2 colours: White or Black
- Available in **AC** & **EC**

Lowering the cost of high ceilings whilst offering high performance, high efficiency and very low sound levels. The stylish and effective SDF fan gently brings warm air down from ceilings in cold weather and mixes cold, conditioned air in warm weather for improved comfort and lower operating costs.

Easy Installation

Fans are supplied with a fitted IP54 terminal box, which allows the fan to be positioned conveniently to incoming electrical inputs. Fans are supplied with GRIPPLE™ attachments for ease of installation.

Warranty

Each SDF has a 12 month warranty.

Construction

Fire-Resistant (5VB), UV-treated PC ABS plastic housing which provides a long lasting and robust construction.

Motor

Motors are highly efficient AC or EC, lightweight external rotor motors suitable for speed control. Each motor has integral overload protection.

Impeller

The Ziehl-Abegg FE2owlet impeller has a unique serrated trailing edge which provides optimised flow and improved acoustics. The Aerofoil blades, complete with winglets, enable increased impeller efficiency.

Typical Applications

- Factories
- Sports Halls
- Shops
- Industrial Units
- Warehousing



Contents

Page	Information	Load
3	Selecting a ZOO fan	
4	Performance SFP & Electrical Data	AC
5	Performance SFP & Electrical Data	EC
6	Sound Data	AC
7	Sound Data	EC
8	Dimensional Data	
9	Accessories	

Product Coding

Code	Reference
SDF	Product Range
250	Diameter (250/300)
/	
4	Number of Poles (2/4/6)
-	
1	Voltage Supply (Single Phase / Three Phase)
AC	Motor Type (AC/EC)
A - Z	Additional Coding (A - Z) Product Variants
e.g.	SDF250 / 4-1AC

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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:

SDF250 AC: 0.265m ³ /s, EC: 0.423m ³ /s. Applications up to 9m height.
SDF300 AC: 0.532m ³ /s, EC: 0.656m ³ /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 m³ ÷ 3600 (seconds in an hour) ÷ m³/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:

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

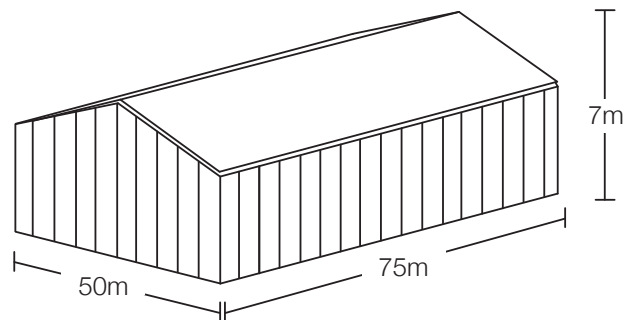
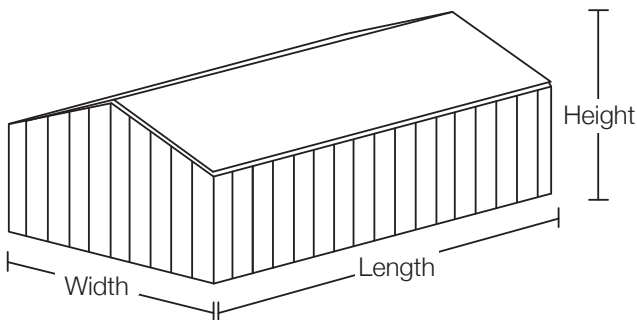
2. As the ceiling height is less than 9m the SDF250 AC can be used:

SDF250 AC 0.265m ³ /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.



ZOO FAN SDF



Performance, SFP & Electrical Data

Single Phase 220V to 240V / 50Hz or 60Hz

Product Code	Frequency Hz	Speed r/min	Motor Electrical Data			Max Volume m ³ /s	Max Operating Temp °C	dBA @ 3m	
			FLC Amps	SC Amps	Input kW			Inlet	Outlet
SDF250/4-1AC	50	1370	0.24	0.40	0.048	0.265	55	Inlet	37
								Outlet	38
	60	1590	0.23	0.39	0.050	0.310	70	Inlet	41
								Outlet	41
SDF300/4-1AC	50	1230	0.41	0.63	0.095	0.532	60	Inlet	43
								Outlet	42
	60	1360	0.41	0.60	0.110	0.593	55	Inlet	46
								Outlet	46

Data provided is at standard air density of 1.2 kg/m³.

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.

Peak Amps @ 230V / 1PH / 50Hz.

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.

ZOO FAN SDF



Performance, SFP & Electrical Data

Single Phase 200V to 277V / 50Hz or 60Hz

Product Code	Speed r/min	Motor Electrical Data		Max Volume m ³ /s	Max Operating Temp °C	dBA @ 3m	
		FLC Amps	Input kW			Inlet	Outlet
SDF250/4-1EC	2568	0.77	0.113	0.423	60	Inlet	53
						Outlet	53
SDF300/4-1EC	1640	1.01	0.150	0.656	60	Inlet	51
						Outlet	49

Data provided is at standard air density of 1.2 kg/m³.

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.

A variable speed drive is integrated within the fan.

Peak Amps @ 230V / 1PH / 50Hz.

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.

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Sound Data



Single Phase 220V to 240V / 50Hz or 60Hz

Product Code	Frequency Hz		Sound Power Level dBW @ Octave Band Hz								Total dB
			63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
SDF250/4-1AC	50	Inlet	52	59	53	53	52	52	49	42	62
		Outlet	51	60	52	52	53	53	48	41	63
	60	Inlet	52	67	58	56	55	56	54	47	69
		Outlet	50	65	58	55	55	57	52	46	67
SDF300/4-1AC	50	Inlet	54	60	60	60	56	59	53	43	67
		Outlet	53	61	62	57	55	58	51	41	67
	60	Inlet	60	77	59	62	58	61	57	47	77
		Outlet	62	77	60	61	58	60	55	45	77

Data provided at standard air density of 1.2 kg/m³.

Tests and preparation of the sound data have been carried out in accordance with BS 848 Part 2:1985 at 50% peak pressure.

The Sound Power Level Spectra are in dB re-1pW.

ZOO FAN SDF



Sound Data

Single Phase 200V to 277V / 50Hz or 60Hz

Product Code		Sound Power Level dB @ Octave Band Hz								Total dB
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
SDF250/4-1EC	Inlet	63	62	67	69	66	69	65	59	75
	Outlet	61	61	68	69	68	68	64	58	75
SDF300/4-1EC	Inlet	62	63	63	64	64	67	65	56	73
	Outlet	61	63	64	63	64	65	62	54	72

Data provided at standard air density of 1.2 kg/m³.
Tests and preparation of the sound data have been carried out in accordance with BS 848 Part 2:1985 at 50% peak pressure.
The Sound Power Level Spectra are in dB re-1pW.

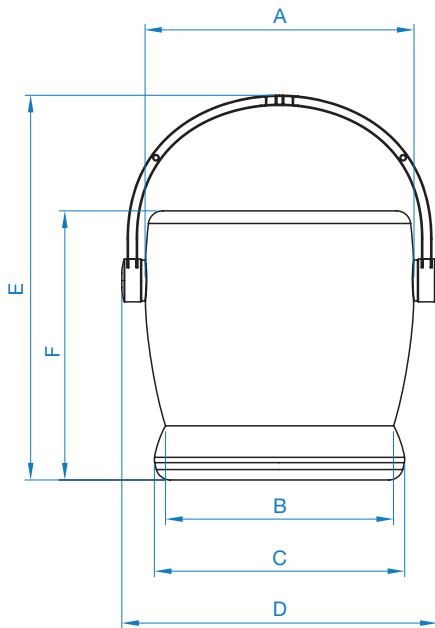
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Dimensional Data

Single Phase

Product Code	A	B	C	D	E	F	Weight kg
SDF250/4-1AC	359	300	352	445	545	375	6.8
SDF300/4-1AC	452	367	421	533	656	460	10.5
SDF250/4-1EC	359	300	352	445	545	375	6.8
SDF300/4-1EC	452	367	421	533	656	460	10.5



Dimensions are in mm.

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Accessories



Single Phase AC

Product Code	Transformer Controller	Wiring Diagram
SDF250/4-1AC	149-TC12	152-177
SDF300/4-1AC	149-TC12	152-177

Single Phase EC

Product Code	EC Electronic Controller	Wiring Diagram
SDF250/4-1EC	149-POT-10	152-00036
SDF300/4-1EC	149-POT-10	152-00036

TRANSFORMER CONTROLLER

Accessories

- IP40 enclosure
- Five speed stepped control
- Illuminated on/off switch (single phase units only)
- Fitted Motor Protection type D MCB (single phase units only)
- Suitable for operating temperatures up to 40°C
- Ideal for environments where noise is a primary consideration as these controls do not create magnetic hum associated with some step-less forms of speed control



Features & Benefits

A range of transformer voltage controllers used to provide five speed step control of single phase or three phase motors where the peak current of the motor does not exceed the rating of the controller. Speed control is via selector switch. Single phase units are complete with illuminated on/off switch.

Single Phase 220V to 240V / 50Hz

Product Code	Max Peak Current Amps	Weight kg	IP Rating
149-TC12	2	3	IP40

EC ELECTRONIC CONTROLLER

Accessories

- EC Type fans
- Variable Speed Drives (Inverters)



Product Code
149-POT-10

149-POT-10 can only be used in conjunction with an 149-TC12-0-10 on AC models.
149-POT-10 required if 149-TC12-0-10 is to be used in manual control.

Building Services

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