



 **MagFan**

 **MagFan**
Plus

 **MagFan**
ONE

MagFan – aerodynamic



nics make the difference





MagFan – world leader in fan efficiency

One unique concept

At first glance there is no visible difference between the three versions of MagFan. MagFan, MagFan Plus and MagFan ONE all make use of the same housing and impeller. The only differences lies in the motor technology used and the possibility of using different impeller pitch settings. One unique concept - three different fans.

Without exception, MagFan outperforms all other fans

MagFan is the world leader in fan efficiency. No matter the version you choose they all offer unrivaled performance, efficiency and service life.

MagFan owes its efficiency to much more than just the high efficiency motors. More than anything else, the very pronounced efficiency advantage stems from the aeromechanics applied in the development of MagFan.

This becomes quite evident when comparing capacities and efficiencies against other makes of similar size fans. Without exception, MagFan outperforms all other fans!

Aerodynamics make the difference

First and foremost, remember that a fan with superior aerodynamics will always be the most efficient fan no matter the speed it operates at. So all the way from minimum speed to full speed, the aerodynamics play the most important role in fan performance and efficiency as well as pressure capability (thrust).

More air can be moved with fewer losses. The fan simply consumes less power to maintain the desired flow.



Careful design leads to aerodynamic benefits

Optimized to perfection

With strict focus on aerodynamics in the design phase, MagFan has been optimized to perfection. The air entering the fan meets no restrictions and the discharge cone leads the air gently from the fan. The motor and impeller hub designs bring minimum restrictions to airflow. The impeller blades are carefully designed and tested to perfection.

These little but important details ensure high airflow rates and unsurpassed energy efficiency.



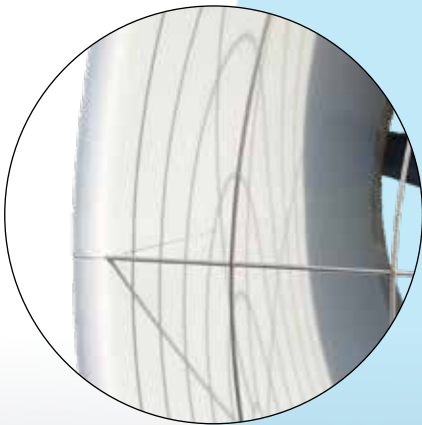
Perfectly designed impeller blades



Rounded and smooth impeller hub



Optimized housing



Carefully rounded edges



Super optimized air intake area



Aerodynamic motor design





Choosing the right MagFan

Total power consumption

Choosing the right MagFan for a given application involves determining how often fans will run at reduced speed. In climates where outside temperatures are near setpoint temperatures, the variable speed feature will have less effect on the total power consumption. Simply because the fan most often will be running full speed in order to keep in-house set point temperatures.

Under such conditions, high efficiency at full capacity is of the utmost importance.

Full speed range

Where outside temperatures fluctuate diurnally and/or seasonally, the fan speed will vary more and the savings obtained with variable speed drives will be more pronounced.

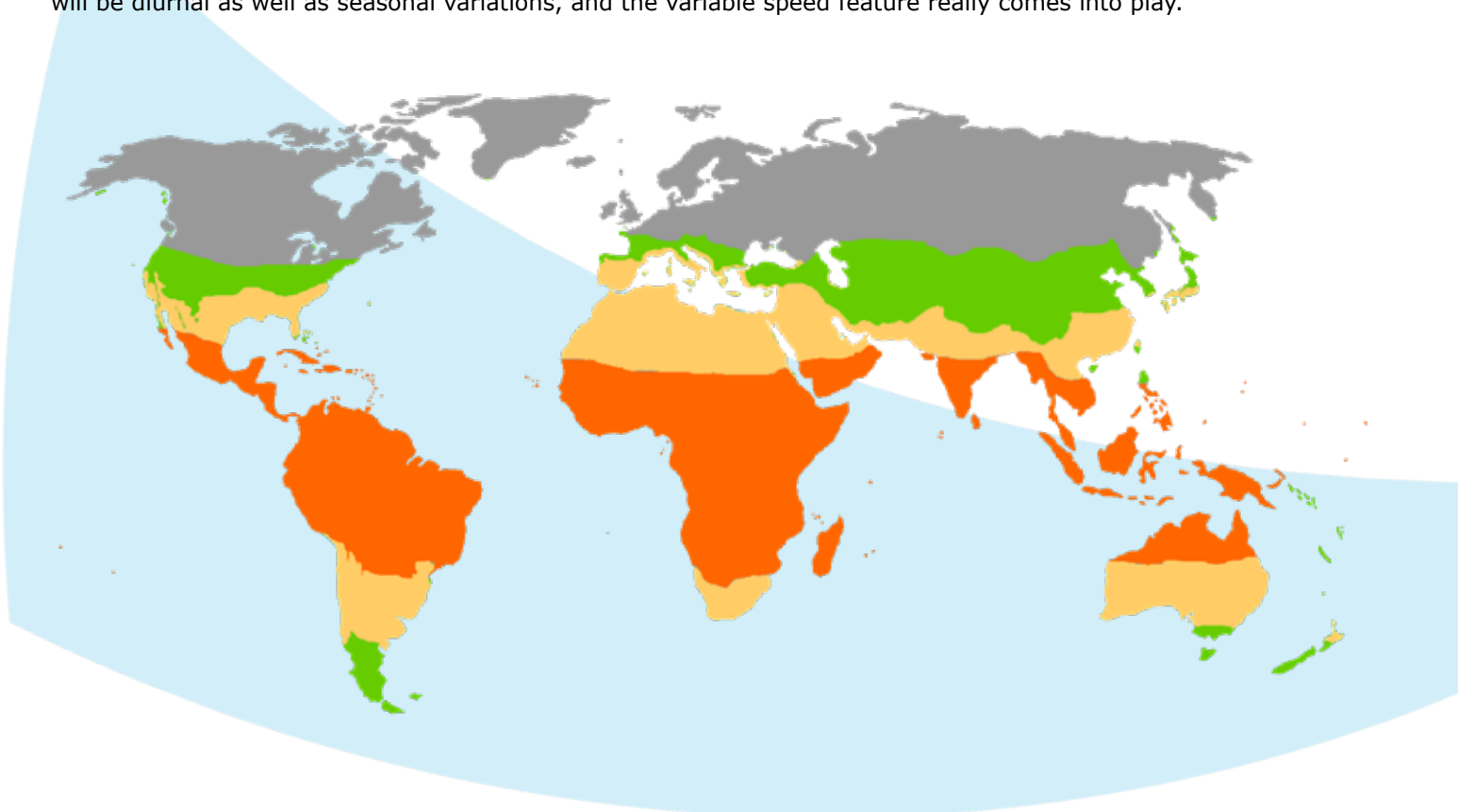
Likewise, if the production has variable heat production and variable temperature setpoints from start to finish (like in a building with broilers), the variable speed fans will make use of their full speed range and spend more hours in "the sweet spot" of high efficiency. To put it simply, a building for broilers in a continental temperate climate has more potential for energy savings using variable speed fans than does a layer house in a coastal tropical climate.

High airspeeds

On the island of Borneo, for instance, a building with layers in commercial cages will require high airspeeds and typically run at an average ventilation level of 80% or more of total capacity, depending, obviously, on the total fan capacity installed. The effect of variable speed fans will be relatively modest.

Diurnal and seasonal variations

At the opposite end of the scale, a building for broilers in inland NSW, Australia, will be going from very low air exchange rates in the early stages of production, to maximum airflow towards the end of the batch. Moreover, there will be diurnal as well as seasonal variations, and the variable speed feature really comes into play.

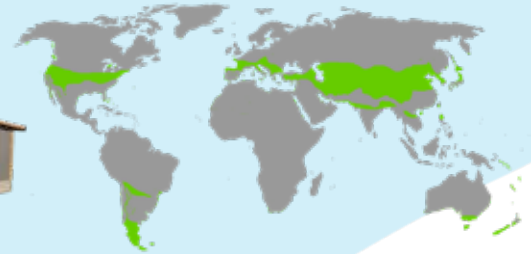


Diurnal and/or seasonal fluctuations

This type of system is designed for the warmer parts of the temperate climate zones and the cooler subtropical climates where seasonal and diurnal fluctuations are distinct.

These buildings are equipped with minimum and medium ventilation systems in order to ensure optimum climate during diurnal and seasonal fluctuations. Here the variable speed MagFans will make use of their full speed range and spend more hours in "the sweet spot" of high efficiency.

The choice of fan depends on whether the animals are Floor Kept which would be MagFan, or Cage Kept which would typically require MagFan Plus.

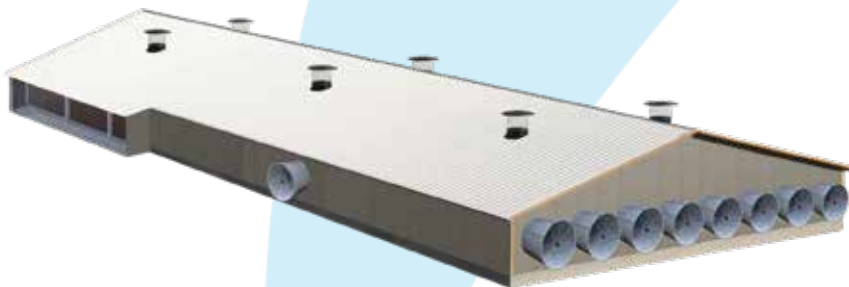


Warmer subtropical zones and into the cooler tropical climates

This system is ideal for the warmer subtropical zones and into the cooler tropical climates where diurnal and seasonal fluctuations are moderate.

These buildings are equipped with minimum ventilation systems to ensure optimum climate during diurnal fluctuations. Tunnel doors and cooling systems work in conjunction with the MagFans to provide cooling.

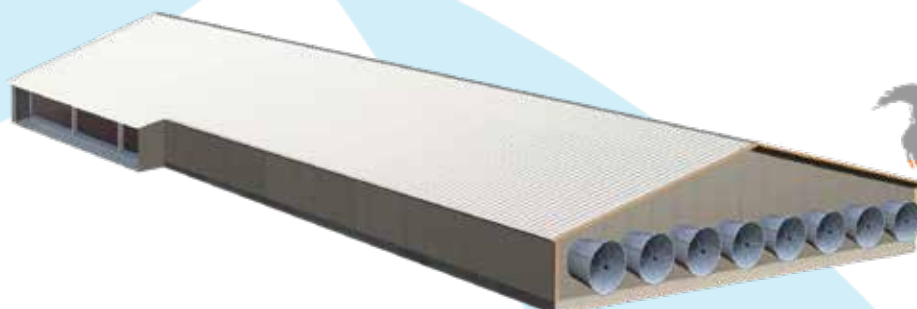
Here the variable speed MagFans will make use of their full speed range and spend more hours in "the sweet spot" of high efficiency. MagFan Plus or MagFan ONE should be considered. The choice between the two should depend on the diurnal and/or seasonal fluctuations.



Warm and humid tropical climates

This system is strictly developed for the warm and humid tropical climates.

These buildings are equipped with low capacity minimum ventilation systems to ensure optimum climate during minor diurnal fluctuations. Tunnel doors and cooling systems work in conjunction with the MagFans to provide cooling. The climate conditions call for high airspeed and MagFan Plus or MagFan ONE should be considered. These buildings typically run at an average ventilation level of 80% or more of total capacity, depending, obviously, on the total fan capacity installed.



Applications

Improved climate conditions

Magfan is ideal in all areas where air movement is required. The high efficiency, the capacity and the possibility of speed controlling makes the MagFan a versatile ventilation unit, adaptable to a large variety of applications.

Widely used

We see tremendous savings and improved climate conditions wherever MagFans are installed. MagFan is already widely used in all types of livestock buildings, in the greenhouse sector and also in the traditional industry. Wherever air needs to be moved MagFan is the answer.



Sustainability

MagFan – fostering energy efficiency in livestock buildings

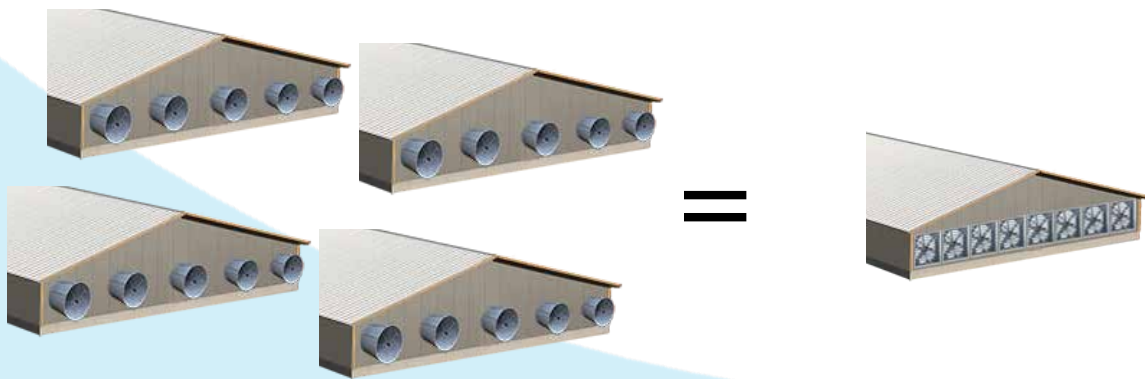
The global demand for energy continues to rise and ventilation of livestock buildings represents a notable percentage of global energy consumption.

Thus, improving the efficiency of ventilation systems plays an important role in fostering energy efficiency in livestock buildings. MagFan greatly reduces energy consumption and at the same time improves indoor air quality via proven climate control strategies.

A lasting ventilation solution

In fact MagFan is so efficient that the energy consumption in four (4) buildings equipped with MagFans is the same as in one (1) building with traditional fans - the same ventilation capacity installed in all five buildings.

In other words MagFan cuts your energy consumption by 75% compared to buildings where traditional fans are installed. MagFan simply is your best choice for an energy efficient and lasting ventilation solution.



MagFan - making use of the sun

MagFan is steps ahead in relation to renewable energy sources.

MagFan connects directly to solar panels and the overall installation cost for the required solar panels to run the fans is only 50% compared to solar panel systems for conventional ventilation systems. Solar Panels are ideal for livestock production because solar panels produce electricity during daytime – just when the need for ventilation in a building for livestock is at its highest.

Responsibility by design

MagFan was constructed with efficiency in mind but we also focused on a design that would significantly reduce transportation cost. Last but not least we wanted a product with an estimated service life of 20 years.

We have already proven that MagFan reduces energy consumption by as much as 75%.

The innovative design reduces shipping volume by 75% – we can ship 150 MagFans in a 40' HC container.

The result is CO₂ emission reductions in manufacturing and transportation, as well as a remarkable emission reduction throughout MagFan's long service life.

That is responsibility by design.



We save 75% energy

PT Japfa Comfeed Indonesia, one of Southeast Asia's leading and most progressive integrators, decided to invest in MagFan for their new PS breeder farm in Central Java, Indonesia.

The testing

– We recorded the consumption over a 24 week period, from bird placement to production. The reference building, commissioned September 2016, uses 3 units of 50" and 4 units of 54" American cone fans. In an identical test building, DACS Indonesia distributor PT Ansell Jaya installed 7 MagFans. Both buildings were fitted with electronic meters, measuring fan energy consumption only, says R. Syaprudin, National Manager for Farm Technology & Environment Control Department in PT Japfa Comfeed Indonesia.

The results

– The results were stunning. The house equipped with MagFan consumes only 25% of the power consumed by the control house. These houses are identical in every aspect, only difference being the fans installed. In fact, we have higher fan capacity in the house equipped with MagFans and still we come out with such a huge difference in power consumption. We have double checked all data and there is no doubt the MagFans outperform the American cone fans by far R. Syaprudin points out.

The future

– The future will bring warmer climates and increases in energy costs, no doubt. Fans will be running longer and harder and power consumption will increase. Admitted, we were skeptical in the beginning, but DACS has proven to us that these fans are really an excellent investment. Not only are they extremely gentle on the power consumption, they are also 100% maintenance free. This definitely is the fan for 21st Century, says R. Syaprudin of PT Japfa Comfeed Indonesia.



24743 kWh
COMPETITOR

6137 kWh



Power consumption
in kWh over 24 weeks

MagFans are whisper quiet

Laurie Brosnan, one of the owners of Bettapork in Queensland, Australia, a 2000 sow full line production with three individual sites for sows, weaners and finishers has installed MagFans in eight sheds.

Quite convincing

– When I first saw the MagFan at the Eurotier show in 2014 I was just about to renew my finisher site. We found that the quality and the operational cost of the MagFan was quite convincing so we made a decision to try them out in eight houses. Each house holds 600 finishers, so to get the air speed needed we installed 5 MagFans per house says Laurie.

Whisper quiet

– We are very happy with the performance to date. The Magfans have less moving parts than others which means less maintenance for us. They are whisper quiet and consume far less power than any other similar size fans on our farm. My staff say the air is cleaner, fresher in these sheds. This because there is a more uniform, constant and stable air speed throughout the house. The MagFans were commissioned in September 2015 and have been running flawlessly ever since and no matter the season, or the age of the animals, the air quality is good and the air speed is exactly where it should be. Great fans and an excellent investment states Laurie Brosnan!





A significant game changer

When presented back in 2014 MagFan was a game changer in the industry - and it still is.

MagFan is still top of the line in terms of efficiency, capacity and air flow ratio (AFR). No other fan has been such a significant game changer in the market for large fans and with its performance data MagFan will always be a winner when compared to other brands.

The direct drive technology, the highly aerodynamic body and motor/impeller construction adds to its qualities and with an estimated service life of 20 years the unit is the only right choice where energy efficiency and sustainable production is in focus.

MagFan uses a state-of-the-art variable frequency drive, allowing for simple single phase installation and a wide range of input voltages, ranging from 85 to 265VAC 50/60Hz, with an optional three phase drive ranging from 360 to 440VAC 50/60Hz.



High performance	+	÷
High energy efficiency	+	÷
High pressure stability	+	÷
Corrosion free	+	÷
Airtight shutter	+	+
Motorized shutter	+	÷
Emergency opening	+	÷
Fits all applications	+	÷
Installation cost	+	÷
Maintenance free	+	÷
Transportation cost	+	÷
Return on investment (ROI)	+	÷
Airflow/price ratio	÷	+
No belts and pulleys	+	÷
CO ₂ reduction	+	÷
Easy to clean	+	÷
Low noise level	+	÷
Long service life	+	÷
Purchase price	÷	+



MagFan 670 RPM/32 deg. impeller pitch:

MagFan 670/32					
Static pressure		Airflow		Energy consumption	
In H2O	Pa	Cfm	m³/h	Cfm/Watt	W/1000m³/h
0.00	0	41400	70500	34.5	17.0
0.05	12	38900	66100	27.0	22.0
0.10	25	36600	62300	23.0	26.0
0.15	37	34700	58900	20.1	29.0

19098

MagFan 670 RPM/30 deg. impeller pitch:

MagFan 670/30					
Static pressure		Airflow		Energy consumption	
In H2O	Pa	Cfm	m³/h	Cfm/Watt	W/1000m³/h
0.00	0	37200	63200	36.2	16.0
0.05	12	35000	59600	30.5	19.0
0.10	25	33000	56000	26.0	23.0
0.15	37	31200	53100	22.9	26.0
0.20	50	29400	49900	20.3	29.0

19225

MagFan 550 RPM/30 deg. impeller pitch:

MagFan 550/30					
Static pressure		Airflow		Energy consumption	
In H2O	Pa	Cfm	m³/h	Cfm/Watt	W/1000m³/h
0.00	0	30600	51900	53.6	11.0
0.05	12	27800	47200	41.7	14.0
0.10	25	25400	43200	34.3	17.0
0.15	37	22800	38700	27.9	21.0
0.20	50	19900	33800	23.4	25.0

19227





Attractive wherever high pressure is needed

MagFan Plus is a more powerful version of MagFan.

The only difference between the two is the motor output. The efficiency of this unit is exactly as good as for MagFan, but due to the 2.2 kW motor the unit can work up to 750 rpm. Therefore it has a higher capacity and continues to produce air flow when static pressures exceed 90 Pascal (0.36 WC).

In large scale operations where static pressures often exceed 60 Pascal (0.24 WC) most other fans cannot produce air but MagFan Plus still produces an impressive 62421 m³/h @ 60 Pa (36740 cfm @ 0.24" WC).

The performance of MagFan Plus allows farmers to build up to 50% larger constructions and thereby increase overall efficiency and profitability. Especially large cage facilities benefit from the powerful MagFan Plus.

MagFan Plus uses a state-of-the-art variable frequency drive, allowing for simple single phase installation and a wide range of input voltages, ranging from 85 to 265VAC 50/60Hz, with an optional three phase drive ranging from 360 to 440VAC 50/60Hz.



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Motorized shutter	+	÷
Emergency opening	+	÷
Fits all applications	+	÷
Installation cost	+	÷
Maintenance free	+	÷
Transportation cost	+	÷
Return on investment (ROI)	+	÷
Airflow/price ratio	÷	+
No belts and pulleys	+	÷
CO ₂ reduction	+	÷
Easy to clean	+	÷
Low noise level	+	÷
Long service life	+	÷
Purchase price	÷	+



MagFan Plus 750 RPM/32 deg. impeller pitch:

MagFan Plus 750/32					
Static pressure		Airflow		Energy consumption	
In H2O	Pa	Cfm	m³/h	Cfm/Watt	W/1000m³/h
0.00	0	46700	79300	27.3	21.6
0.05	12	44500	75600	23.5	25.0
0.10	25	42000	71300	20.4	28.8
0.15	37	40400	68600	18.2	32.4
0.20	50	38400	65200	16.1	36.5

MagFan Plus 750 RPM/30 deg. impeller pitch:

MagFan Plus 750/30					
Static pressure		Airflow		Energy consumption	
In H2O	Pa	Cfm	m³/h	Cfm/Watt	W/1000m³/h
0.00	0	42000	71300	29.3	20.1
0.05	12	40100	68200	25.6	23.0
0.10	25	38100	64700	22.0	27.0
0.15	37	36300	61700	19.7	30.0
0.20	50	34800	59100	17.8	33.0
0.25	62	33300	56500	16.1	37.0
0.30	75	31300	53200	14.5	41.0
0.35	87	29100	49500	13.0	45.0
0.40	100	26700	45300	11.7	50.0

19223





Setting new standards

MagFan ONE is our "conventional" ON/OFF wall fan.

MagFan ONE sets new standards in terms of efficiency, capacity and pressure performance. This has simply revolutionized the market for ON/OFF controlled wall fans.

MagFan ONE is in every aspect identical to the existing MagFan, except it is an ON/OFF fan. It is still a direct drive fan, so no belts and pulleys – hence no maintenance.

Best in test at Bess Lab

With 22.4 cfm/Watt MagFan ONE has one of the highest Energy Efficiency Ratings of all fans tested at Bess Lab (project number 18465).

With an Air Flow Ratio of 0.85 and 62700 m³ @ 25 Pa (36900 cfm @ 0.1" WC) MagFan ONE outperforms all other top 1% fans tested at Bess Lab by a wide margin.



High performance	+	÷
High energy efficiency	+	÷
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Airflow/price ratio	+	÷
No belts and pulleys	+	÷
CO ₂ reduction	+	÷
Easy to clean	+	÷
Low noise level	+	÷
Long service life	+	÷
Purchase price	÷	+

MagFan ONe 720 RPM/30 deg. impeller pitch:

MagFan ONe 720/30					
Static pressure		Airflow		Energy consumption	
In H2O	Pa	Cfm	m ³ /h	Cfm/Watt	W/1000m ³ /h
0.00	0	40900	69500	28.7	21
0.05	12	39000	66300	25.4	23
0.10	25	36900	62700	22.4	26
0.15	37	35000	59500	20.0	29
0.20	50	33200	56400	18.1	33
0.25	62	30800	52300	16.0	37
0.30	75	28600	48500	14.3	41
0.35	87	25900	44000	12.8	46
0.40	100	22200	37700	10.9	54

18465

Three phase induction motor

The three phase induction motor on MagFan ONe uses the same design as that of MagFan and MagFan Plus.

Smooth surfaces and carefully designed end shields allow for high aerodynamic efficiency on this easy-to-clean, fully enclosed motor.



Installations all over the world



Indonesia



Myanmar



Australia



Malaysia



Taiwan



Canada



USA



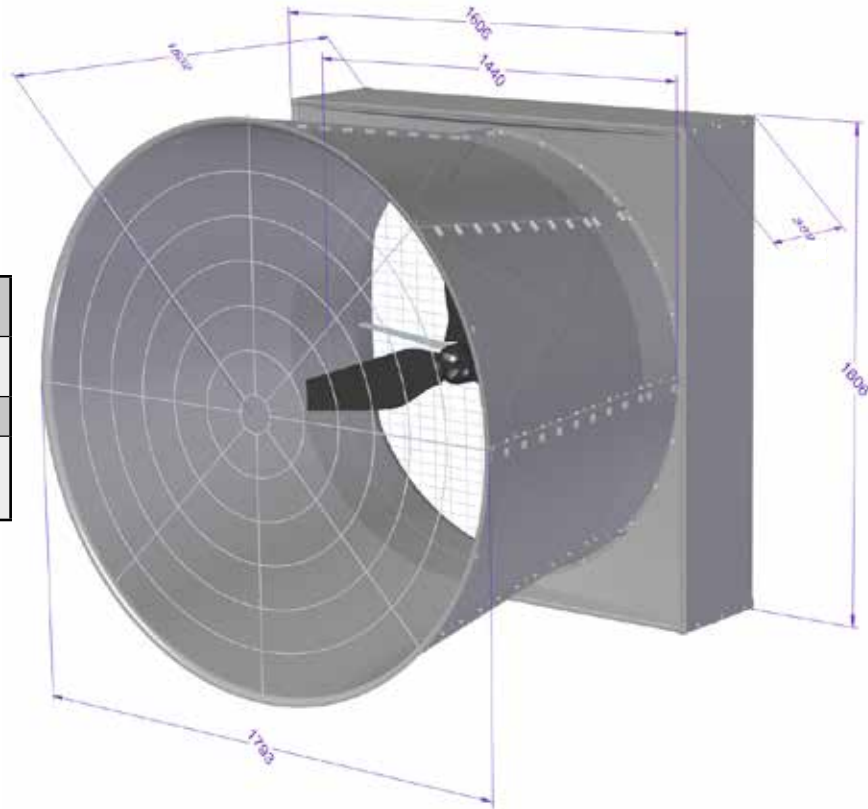
Pakistan






Argentina

Technical specifications

Housing and cone	PP-HD, gray (RAL 7040) PVC, gray (RAL 7040)
Impeller blades	Material: Celstran Technofiber Tip clearance: 0.4" (10mm)
Brackets, guards	Stainless steel / AISI 304 / A2
Dimensions assembled	Weight: 90-120kg / 200-250 lbs. L x W x D (mm): See drawing Impeller diameter: 1430mm / 56.5"



			
Drive	Water proof speed drive (IP 66) Cos (phi) / power factor at full load: 0.99	Water proof speed drive (IP 66) Cos (phi) / power factor at full load: 0.99	
Output (continuous duty)	In-built drive and motor protection Insulation class F, 170°C magnets In-built double Klixon thermal protection	In-built drive and motor protection Insulation class F, 170°C magnets In-built double Klixon thermal protection	Insulation class F In-built double Klixon thermal protection
Motor	1.2kW RPM: max 670 Permanent Magnet synchronous 3-phase	2.2kW RPM: max 750 Permanent Magnet synchronous 3-phase	1.8kW RPM: 720 @ 50Hz Asynchronous 3-phase motor
Voltages	85-265VAC 50-60Hz single phase 360-440VAC three phase	85-265VAC 50-60Hz single phase 360-440VAC three phase	3x400V, 50Hz (Y) or 3x230V, 50 Hz (D) or speed controlled via any VFD.
Capacity	Up to 70500 m ³ /h (41400 cfm)	Up to 79300 m ³ /h (46700 cfm)	Up to 69500 m ³ /h (40900 cfm)
Pressure	up to 75 Pa (0.30")	up to 100 Pa (0.40")	up to 100 Pa (0.40")
Air flow ratio	0.85	0.86	0.85

ENERGY EFFICIENCY IS OUR DNA

DACS is a family owned company with more than 30 years of experience.

We specialized in developing, producing and servicing climate and ventilation control system for livestock production.

The DACS ventilation systems create a perfect in-house climate with a minimum of energy consumption, ensuring a profitable production no matter the time of year.

Built to the highest standards, thus providing minimal maintenance & long service life.

We have used our comprehensive knowledge on both livestock production and ventilation in the development of among others our award winning wall fan MagFan. Our products meet or exceed the international ISO5801 standard.

We want to be close to our customers. We know your world, and we understand your challenges.

DACS bring you:

- ***Energy efficient ventilation systems***
- ***Total production and climate control***
- ***Improved animal welfare***
- ***Timely, accurate deliveries***
- ***Superior product quality and service***



INNOVATION IN VENTILATION

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