CI/SfB
(57)
February 2013

Ventilation Solutions

Product Range > Fans

ErP Compliant

FläktWoods

Fläkt Woods experience – at your service

Fläkt Woods is a global leader in air management. We specialise in the design and manufacture of precision technology to deliver complete, integrated solutions. In everything we do, energy efficiency and environmental responsibility are always our major priorities. And our collective experience is unrivalled.

e3 ENERGY EXPERTISE ENVIRONMENT

Our knowledge and reputation has been built up through a century of engineering innovation and development. This reflects an impressive track record that equips all our customers with a special confidence. An assurance that, whatever the need or application, Fläkt Woods can deliver the product, the performance and the service that is required. Precisely.

Our expertise is not confined to original manufacture and supply. It is available to you from the selection process onwards, and continues well beyond installation, throughout each system's operating life.

When you first select and install one or more of our systems, our partnership with you is only just beginning. Because you'll always be able to call on Fläkt Woods experience. We're at your service.

Fläkt Woods systems summary

The comprehensive Fläkt Woods range serves a very wide spectrum of applications: across Commercial, Industrial, Public and sectors.

Systems to create integrated air quality solutions include

- Axial and Centrifugal Fans
- Box Fans
- Inline Fans
- Roof Units
- Other Air Terminal Devices and Ducts
- Integrated controls

Fans

The widest selection for all sizes and types of application. These range from large supply and extraction fans for service in industry or infrastructure, through to compact and small units for domestic ventilation – or as components for air management equipment. We also have specialist options and ranges to help deliver fire safety and extra energy efficiency.

Total air movement solutions – precisely

Air movement in occupied buildings has many roles to play. Not just to bring the ventilation and comfort that are vital to human existence. It also has the potential to protect.

In an ideal world, this would all be achievable via natural, non-mechanical processes. But reality is different. In most cases, and to varying extents, powered air movement is essential.

From functional operational routines, to one-off emergency situations, fans have a front-line role to play in many built environments. And, whatever each precise need, Fläkt Woods certainly has the right solution.

The perfect solution

The ideal air movement equipment will satisfy the correct combination of several factors, insofar as each applies to a specific project:

- Function
  Including air supply or extraction; heat transfer and recovery; drying; blowing; particle transportation and filtering; and, in the event of fire, emergency management of smoke and toxic fumes
- Flow
  Required air volume capacity and speed
- Energy efficiency
  Less energy consumed to achieve the desired result
- Controllability
  Allowing performance to match demand – no more, no less
- Sound
  Quiet operation to avoid noise distraction
- Space availability
  Fitting the space or location available

At Fläkt Woods, we have the technology and experience to give you that combination.

From one expert source

Fläkt Woods has the widest range of fans available in today's market: from the largest infrastructure fan; through to compact, lightweight models designed for small premises or domestic situations.

That means we can deliver all the air movement functions, capacity and performance that a building or structure requires – whatever its size and purpose.

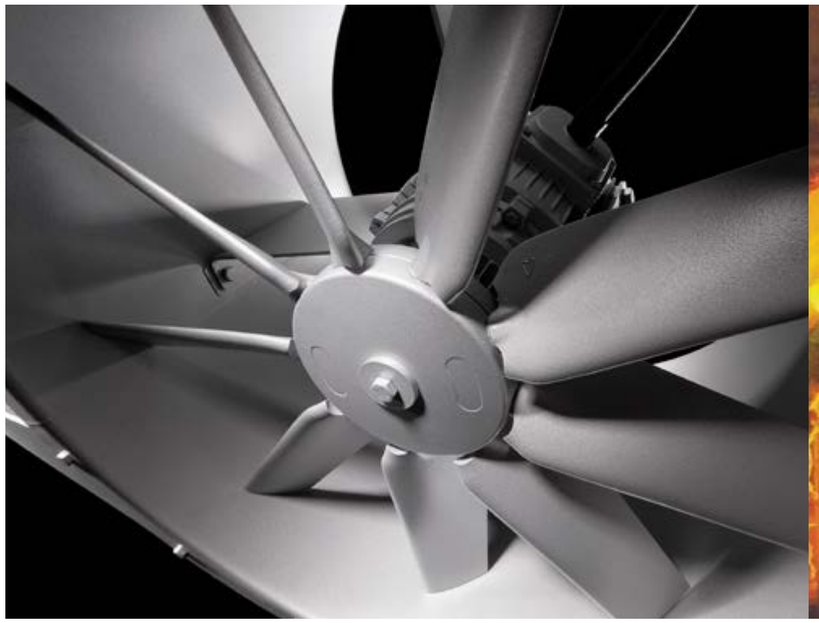
In short, our expertise has precisely the answer you need.

Contents

General ventilation

The perfect fit – reliability in action

Whatever its function, it must do it well. That is the constant theme of all Fläkt Woods product designs, and is reflected in each product's performance across our entire system portfolio. Our fans are widely recognised as today's premier range, and trusted to go on doing the job – day in, day out.



The application context may vary, but the fundamental requirements are the same: supply and extraction. System requirements will be dictated by building size and function, and by numerous other operational parameters, which the installed ventilation must satisfy.

With Fläkt Woods, you have a genuinely comprehensive choice. We can be relied on to have exactly the fan type, model, performance, and capacity each situation needs. You can also completely depend on the quality and reliability of its engineering.

For introductory key details of Fläkt Woods fan ranges, including standard features and options, see pages 16-21.

For assistance with identifying precisely the right fan solution for your specific projects, visit

http://fanselector.flaktwoods.com

Fan options for general ventilation

Units and ranges designed to provide routine ventilation and general air movement functions for a variety of applications and environments include:

- Axial Fans
- Bifurcated Fans
- Box Fans
- Plate Fans
- Tube Fans
- Roof Units
- Centrifugal Fans

Fläkt Woods also offers a comprehensive choice of units for whole house/domestic ventilation, as well as mini air handling units for small commercial and industrial premises.

Hazardous areas

ATEX-compliant range

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www.flaktwoods.com/atex

Mechanical ventilation and extraction can be required in environments which have potentially explosive atmospheres – whether from chemical vapours, volatile gases or hazardous dust. For these situations, we have the widest range of fans that comply fully with the ATEX 100a Directive.

ATEX

Compliance became a legal requirement in 2003. The Directive applies to a wide variety of equipment intended for use in hazardous areas, such as petro-chemical plants, pharmaceutical and chemical manufacturing, battery rooms, flourmills and grain silos.

Fläkt Woods has invested heavily in fan engineering design modifications to achieve and satisfy the necessary high specifications. For fans, these safety modifications include:

- Features to avoid or minimise sparks
- Changes to the motors and material thickness
- Impeller locking systems
- Adjustments to impeller tip clearances

We also have systems in place to ensure continuous ATEX compliance during our normal production.

Fan options for ATEX environments

Fläkt Woods offers fully ATEX-compliant CE-marked fans in the following ranges:

- JM Aerofoil
  Axial fans range
- Centripal EU
  Centrifugal fans range

Fire safety

Fans for Life Safety systems

Within any building's total functionality, one element is paramount: its ability to ensure a safe environment in the event of emergency conditions. If and when such a situation occurs, Life Safety for the occupants and for emergency services, and damage limitation for the building fabric, immediately becomes the priority for the ventilation system.

Fläkt Woods has the necessary experience, and product options available, to manage such important risk factors.

100 years of air movement knowledge, combined with our in-house expertise and contributions to the development of industry standards, mean we are well placed to respond to new challenges and regulation changes.

Through continuous Research, Development and Innovation we have consistently advanced fan technology to deal with emergency fire protection.

Fan options for Life Safety systems

Fläkt Woods units designed for emergency ventilation and smoke extraction at high temperatures include:

- JM Aerofoil
- JM High Temperature Aerofoil
- JM Bifurcated Aerofoil
- JM Multi-stage Aerofoil
- Centrifugal Single Inlet
- UDA & DVA High Temperature Roof Units

All these fan types are suitable for both normal and emergency smoke ventilation conditions, and can be inverter speed-controlled.

In normal mode, they have lower Specific Fan Power (SFP) values and optimised running costs, because the inverter controls average power consumption and extract rate.

Specific control functions

Our fan technology plays several important roles in the event of an emergency condition. Each could be an important defence against life-threatening fumes and hot smoke:

- Control and removal of hot smoke/gases to give time for occupants to escape – even if the fan itself is subject to high temperatures
- Extraction of 'cool' smoke while it remains unstable in the early stages of a fire
- Pressurisation: supply of clean air into escape routes to hold back smoke
- Clearance: removal of residual smoke after fire is contained and suppressed

Natural ventilation may be inadequate for these needs, particularly where 'cool' smoke may be involved, and could be compromised by prevailing winds.

When the heat is on

That's when you need total reliability, without compromise. The capacity to function even in extreme, emergency circumstances. Efficiently controlling and extracting smoke, fumes and hot air – on demand.

Fläkt Woods' axial and centrifugal ranges are designed to give you precisely that assurance. They offer high temperature performance that is ready to respond if the situation arises, and safe operation that deserves the confidence of designers, installers and users.

General specifications

Fläkt Woods fans for smoke control and fire safety are supplied with the following general specifications:

- Installation
  - Suitable for internal and external mounting
  - Run and standby operation, in parallel or series
- Standards
  - EN 12101-3 compliant
  - Aerodynamic tested to BS ISO 5801:2007
  - Acoustic tested to BS 848-2.5:2003
  - CE-marked
- Motors
  - IE2 motors where applicable
  - IP55 rated motor protection
- Impeller
  - Non-stalling pitch blade angle (available on certain fans)
  - X-ray examination of impeller castings

Emergency temperature capabilities

While our units for emergency situations are suitable for normal ventilation operation, they are specifically designed for one-off operation at the following temperatures:

- 200°C for 2 hours
- 250°C for 2 hours
- 300°C for 2 hours
- 400°C for 2 hours

100% X-rayed impeller components

By the nature of the process, die casting of metals can conceal hidden porosity. This can structurally reduce core strength, and increase the possibility of fatigue or failure, especially at elevated emergency temperatures.

However, with Fläkt Woods' axial fans, you have the assurance that all cast impellers have been subjected to X-ray inspection to ensure test compliance and product integrity.

Fire safety

Complete smoke extraction systems

In a fire emergency, smoke is a potential killer unless it is quickly controlled. It can also hamper the work of emergency services. Whatever the type and function of a building, diligent planning for the fast, effective removal of smoke is an essential provision to ensure personnel safety.

Fläkt Woods has the experience to provide complete and precisely tailored solutions for almost any industrial, commercial or residential applications including:

- Warehousing
- Multi-storey shopping malls
- Offices
- Multi-occupancy housing/ apartment blocks

and special-need environments such as:

- Enclosed or underground car parks

In addition to powered extract fans, we offer a comprehensive range of ventilation components to cover both daily requirements and emergency situations.

These products are tested to BS EN 12101 specification standards for smoke and heat control systems.

Products for smoke extraction systems

Fläkt Woods can design, supply and install complete systems for smoke extraction to suit the specific needs of each individual building. Each system may comprise the appropriate combination of:

- Design
- Mechanical or natural ventilation products
- Control systems
- Sensors
- Electrical wiring
- Commissioning

Protective ventilation for car parks

Fan options for car park ventilation

Fläkt Woods fan technologies designed for use as part of these more complete, cost-effective and tailored ventilation solutions for car parks include:

- Jet Thrust Range:

  Compact Profile
  Slim-Line
  Standard
  Oval Profile
  EV Range

In-line axial fans that are reversible, truly symmetrical impellers to provide efficient flow in both directions.

- Induction Thrust

Shallow-profile centrifugal fans, ideal for car parks with significant height restrictions, especially those requiring a unidirectional system for clearance of air pollution and smoke.

In enclosed or underground car parks, a fire emergency requires fast, intelligent action to contain and control the problem. Fläkt Woods technology, application knowledge, expertise and state of the art software combine to provide a unique approach, with tailored solutions.

Traditional car park ventilation techniques are based on air change rates and duct runs with vertical droppers and high/low level grilles. This ducting typically uses up valuable headroom and parking space, and such systems are costly to install and operate. Fläkt Woods can provide a modern alternative solution providing benefit to client and user alike, whilst complying fully with the latest technical requirements and European standards.

Operating on demand

Unlike these old-style systems, with Fläkt Woods solutions there is no requirement for the ventilation system to run continuously. Our systems operate only when required, using a series of strategically placed, independently controlled fans.

Under normal operational conditions, sensors detect pollution such as carbon monoxide (CO), Liquefied Petroleum Gas (LPG) and Nitrogen Oxides (NOx). Selected fans automatically induce the contaminated air and direct it to the main extract point for discharge.

In the event of a fire emergency, Fläkt Woods systems control the direction of smoke travel. Smoke sensors trigger fans to run up to full design speed to direct the smoke, via other fans as necessary, to the nearest extract point. Smoke, heat and toxic fumes are removed swiftly and safely from a fire by the shortest route.

Tailored solutions using CFD

Our car park solutions are individually modelled to suit each building's layout. Computational Fluid Dynamics (CFD) software, combined with Fläkt Woods in-house expertise and own fully-researched input data, is used to plot the ideal number, type and location of fans required for each application.

A computerised 3D model evaluates airflow with only the main extract system in use. This identifies main airflow routes and highlights any stagnant or recirculatory areas. Our fans are then superimposed upon this model and placed in optimum positions to achieve both normal extract and emergency fire/ smoke extract.

Main extract fans in these installations can be smaller because there is less ductwork resistance. Installation costs are lower and, because the system operates only when required, running costs are also minimised.

Legislation Requirements

ErP Directive - Objectives

"ErP" stands for "Energy related Products". The associated Directive supports the aims of the EU Climate and Energy Package by encouraging the use of environmentally friendly designs ("Eco design"), in order to reduce greenhouse gas emissions by 20%, whilst also increasing the use of renewable energy sources in the EEA (up to 20%) by 2020. However, the main focus of the ErP directive is to increase combined fan and motor energy efficiencies by 20%. This ethos is also known as the "20-20-20" target. Although the ErP Directive only applies within the EEA, others often adopt European legislation as best practice, especially as the Directive is based upon the Kyoto Protocol.

For this reason, within the main ErP Directive 2009/125/EC, applicable standards have been developed for each specific product group for use within the EEA. For fans, the Commission's regulation (EU) 327/2011 (also known as lot 11), applies. electric motors and their construction are also covered separately by Regulation 640/2009.

Products Affected

There are some exceptions, but most energy using products will be affected by this ErP Directive. Electric motors are of specific interest to fan manufacturers as these are core to almost all products. Regulation No. 640/2009, which sets the minimum efficiency requirements for electric motors, came into effect on 16th June 2011 and relates to electric motors rated between 0.75kW and 375kW. On 1st January 2015, this will be extended to include electric motors with a rated output of 7.5kW to 375kW.

Regulation 327/2011 Requirements

All fan products incorporating motors which have an electrical input power of between 125W and 500kW are within the scope of this regulation.

Fans are rated taking into account the combined motor and impeller efficiency to give an FMEG rating (Fan Motor Efficiency Grade), which is then checked against the minimum pass grades stated within the 327/2011 regulation (see table 1) and used to determine if the complete product meets the target efficiency to enable it to be sold and used within the EEA. On the 1st January 2013 the first efficiency tier requirements for fans will be enforced, with a second higher tier of efficiency targets coming into effect on 1st January 2015. Manufacturers are legally required to ensure that their products comply with this legislation

ErP Compliant Product Identification

Products that do not meet their required FMEG rating will therefore not be ErP compliant, which in turn means that a CE mark cannot be affixed to them. The CE Mark is a legal requirement for products to be sold within the EEA.

CE

For products which comply, there is a legal requirement to affix a label which shows 5 key pieces of ErP related information, the FMEG grade, the measurement category, the efficiency category and the overall efficiency of the product at its optimum energy efficiency point and if applicable, confirmation that the calculation of fan efficiency is based on the use of an Inverter (VSD).

Although products which are ErP compliant will of course display a CE mark, Flakt Woods products will also display a distinctive "ErP compliant" logo (see below) to help customers identify compliant products. This logo will also be used in all relevant marketing material, selection tools, and packaging to assist in positive identification of compliant products.

Regulation Exemptions and Allowances

Some fans which are designed to be used in particularly hazardous conditions are not required to comply with this directive. ATEX fans, high temperature fans (operating continuously at temperatures above 100°C) or Smoke Extract fans designed for single emergency use operation are the most common exemptions.

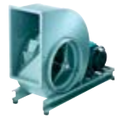
Dual use fans which are designed to provide normal ventilation and short-term emergency Smoke Extraction, do need to comply, but can have additional grade allowances applied to compensate for the increased running clearances required in such products.

ErP Compliant

Legislation Requirements

ErP Directive - Targets

Table 1

125 W - 500 kW				Efficiency Grade N	
Fan Type			**Test Category**	**2013**	**2015**
Axial		Cased Axial Impeller	B - OPEN INLET AND DUCTED OUTLET 	ErP 50	ErP 58
Centrifugal		Forward Curved Impeller	D - DUCTED INLET AND DUCTED OUTLET 	ErP 42	ErP 49
		Backward Curved Impeller		ErP 61	ErP 64

125 W - 500 kW				Efficiency Grade N	
Fan Type			**Test Category**	**2013**	**2015**
Axial		Short Cased and Plate mounted Axial Impller	A - OPEN INLET AND OPEN OUTLET 	ErP 36	ErP 40
Centrifugal		Backward Curved (Plug Type)	C - DUCTED INLET AND OPEN OUTLET 	ErP 58	ErP 62

Energy efficiency

More function – less consumption

As the world tries to combat and halt global warming, the focus on energy consumption and its 'carbon footprint' increases. If we can use less, that footprint will be smaller. At Fläkt Woods, we are constantly applying our technological skills and experience to the continuing drive for greater efficiency and reduced energy waste in order to minimise the environmental impact.

ACT ON CO_2

Energy efficiency is a core principle of our fan design. Environmental concerns are not the only factor. The problem of escalating energy costs is a significant additional incentive.

So our development focus is always firmly on two principal goals:

- Delivering the same (or better) functions, while reducing the amount of power a fan needs
- Enabling it to operate only when needed

Within our total range, we can now offer motor efficiencies up to 97% and motor power factors of 0.9 and above.

These are all reasons why you can rely on Fläkt Woods to help you comply with new or updated legislation, or solve a specific building requirement. With our Life Cycle Costing assessments, we can ensure that both energy consumption and running costs are reduced to a minimum.

Fan options for extra efficiency

Units designed to run at maximum efficiency, or avoid wasted energy by reacting automatically to changes in demand, include:

- *iFan* Single Box Fan
- *iFan* Twin Box Fan
- Inverters (E.C.A. approved products)
- JM Aerofoil (with IE2 motors)
- JM High Temperature Aerofoil (with IE2 motors)

Achieving lowest SFPs (watts/litre/second)

No fan can run at 100% total efficiency: some power is needed to deliver its function. However, the primary objective is to minimise the ratio of power to volume flow rate – using less power to deliver more volume flow rate.

Recent Building Regulation updates now include SFP values, and apply to both new and existing buildings.

For new buildings, these regulations now specify that SFP values should not exceed 2.5 for central systems incorporating energy recovery, and no more than 1.8 for those without energy recovery heating or cooling.

Principles of extra operational efficiency

More efficient solutions can also be achieved by recognising – and avoiding – factors that contribute to higher motor power requirements.

For example, run and standby applications in series are more power-hungry than fans placed in parallel. That's because, with parallel placement, damper loss is less than idling fan loss, making it the preferred installation to reduce system resistance.

We do recognise that parallel positioning may not always be possible, and that systems need to be tailored to fit the requirements of each installation.

Nevertheless, by drawing on Fläkt Woods' extensive experience, fan selections can be optimised for any situation – typically with smaller motors, lower noise levels, reduced SFPs and less power consumed.

General specifications

Fläkt Woods fans to achieve maximum energy efficiency are supplied with the following general specifications:

JM Aerofoil Product range

- Installation
  - Suitable for internal and external mounting
  - Run and standby operation, in parallel or series
- Standards
  - Aerodynamic tested to BS ISO 5801:2007
  - Acoustic tested to BS 848-2.5:2003
  - CE-marked
- Motors
  - IE2 where applicable
  - IP55 rated motor protection

iFan Box Products

- Installation
  - Suitable for internal mounting
  - Options: single fan, and run and standby fan
- Standards
  - Aerodynamic tested to DIN24163 or DS848 Part 1
  - Acoustic tested to DIN45635 or DS848 Part 2
  - CE-marked
- Motors
  - IP44 or higher rated motor protection

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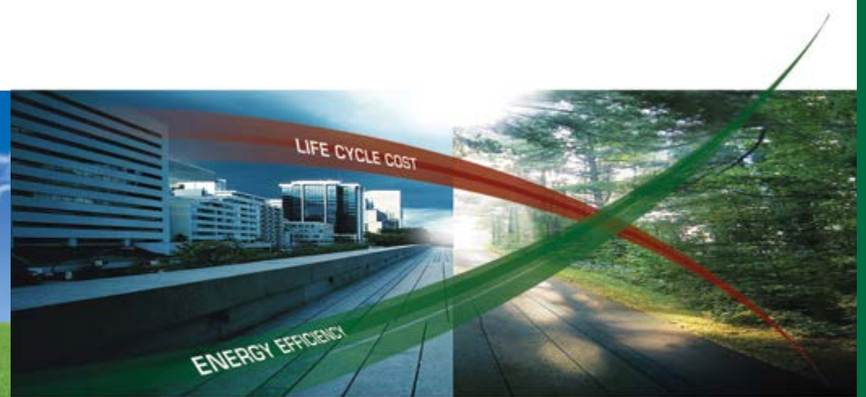


Energy efficiency

Intelligent control – matching need

Mechanical ventilation should only be provided when it is actually required – delivered when demanded. Otherwise, by definition, the system operation is a waste of energy and resource.

That's why, at Fläkt Woods, we've developed increasingly intelligent technology. Systems that can take responsibility for recognising when the need is there – or when system requirements change – and react accordingly to maintain peak operating conditions.

The goal of this advanced Fläkt Woods technology is simply stated: optimum performance with minimum running costs while providing full functionality.

Delivering demand-controlled ventilation

Our *iFan* intelligent fan systems always deliver performance tailored to the needs of the moment within the building space concerned – whether public, commercial or residential.

This advanced ventilation can therefore help maintain a better, more comfortable indoor environment while reducing energy usage and running costs to the minimum necessary.

It does so using sophisticated controls that are constantly monitoring and reacting to changes in its operational environment.

iFan integral control specifications

The intelligent controls that are integral to *iFan* operation include:

- Function
  - Auto changeover facility (Run & Standby mode)
  - Duty sharing (Run & Standby mode)
  - Run-on timer
  - Speed controller
- Performance
  - Improved SFP values in normal ventilation mode
  - Fan operation varies in response to input signals: from maximum to trickle or stop
- Set-Up
  - Integration with Building Management System (BMS) if required
  - Remote monitoring availability
  - Low voltage sensors/switches

While each *iFan* is effectively a stand-alone system, it can operate as part of the building control system when linked into the BMS. The Intelligent Control Unit (ICU) is at its heart, and this can be programmed for various environmental conditions – either via automatic or manual (user) control.

As well as receiving and acting on sensor inputs, the ICU incorporates an LED display for set-up, operation and maintenance. This enables easy monitoring of running times, fan speeds and other operational data. It can also indicate faults or service intervals.

Commissioning *iFan* units

Commissioning is fast and simple. Each system features plug and play low voltage sensor and switch connectors, and a plug and socket connector between the ICU and *iFan*.

The ICU is then programmed with the maximum demand and operational conditions that are to be monitored. This control strategy is determined by the requirements of the installation design for the building environment.

Inverter drives & Fans with IE2 motors: qualifying for tax breaks

Selecting systems and equipment designed to reduce energy consumption can save money in other ways.

Installation of approved inverters and fans with IE2 motrors can mean Enhanced Capital Allowance (ECA) tax breaks are available in the U K. These offset your investment against taxable profits, and thereby help reduce payback timescale for the plant.

Range key details

Axial fans

For general air movement and special applications.

Including options for:

- Emergency high temperature smoke extraction *(see page 8)*
- ATEX environments
- Pressurisation

Standard features

- All fans are certified to ISO 5801
- CE marking
- X-ray inspection of all cast impeller parts
- IE2 motors where applicable
- High energy efficiency: reduced SFP
- Motor protection IP55
- Non-overloading
- Adjustable pitch impeller for exact performance required
- Low installed noise levels
- High temperature capability: up to 200°C for 2 hours for three-phase fans only

Range options

- Long and short casings
- Multiple blade configurations
- Inverter: speed controllable
- Explosion proof/ATEX compliant versions
- Higher temperature operation capability: tested to BS EN 12101-3

JM Aerofoil

- Sizes: 315mm to 1600mm Ø
- Volume flow: up to 65m³/s
- Static pressure: up to 2150 Pa
- Operating temperature range: -20°C to +50°C
- IE2 motors where applicable
- Role: General ventilation and/or extraction

JM High Temperature Aerofoil

- Sizes: 315mm to 2800mm Ø
- Volume flow: up to 210m³/s
- Static pressure: up to 2070 Pa
- High temperature capability: up to 400°C for 2 hours
- IE2 motors where applicable
- Role: Emergency ventilation/ hot fire smoke extraction

JM Multi-stage Aerofoil

- Sizes: 315mm to 1000mm Ø as standard. Larger sizes are available on request
- Volume flow: up to 31.7m³/s
- Static pressure: up to 2000 Pa
- Operating temperature range: -20°C to +50°C
- IE2 motors where applicable
- Role: Higher pressure development
- Option: Further multi-stage fans available for higher pressures

JM MaXfan and MaXfan Plus Aerofoil

- Sizes: 400mm to 630mm Ø
- Volume flow: up to 7.2m³/s
- Static pressure: up to 1100 Pa
- Operating temperature range: -20°C to +50°C
- IE2 motors where applicable
- Role: High pressure kitchen extract
- Options: Single-phase or three-phase

JM Bifurcated Aerofoil

- Sizes: 500mm to 1000mm Ø
- Volume flow: up to 20m³/s
- Static pressure: up to 1000 Pa
- Operating temperature: up to 200°C
- IE2 motors where applicable
- Motor separated from air stream
- Role: Exhaust/recirculation of fumes/gases/hot air

Large JM Aerofoil

- Sizes: up to 3550mm Ø
- Volume flow: up to 370m³/s
- Static pressure: up to 3400 Pa
- High temperature capability: – up to 250°C for 2 hours – options up to 400°C for 2 hours
- IE2 motors where applicable
- Role: Heavy duty industrial and infrastructure applications – higher pressure/volume

SuperLight Plate Axial

- Sizes: 315mm to 1000mm Ø
- Volume flow: up to 8.8m³/s
- Static pressure: up to 560 Pa
- Operating temperature range: -30°C up to +70°C
- Low noise
- Additional option: Can be installed in a variety of positions

JM Aerofoil Plate Axial

- Sizes: 315mm to 710mm Ø
- Volume flow: up to 3.15m³/s
- Static pressure: up to 180 Pa
- Operating temperature range: -40°C up to +70°C
- Speed controllable
- Motor protection IP55
- Overheat protection fitted as standard on single phase motors
- Options: Single-phase or three-phase

Range key details

Inline Fans, Box Fans and Roof Units

Compact boxed units for air supply and extract where space is restricted.

Standard features

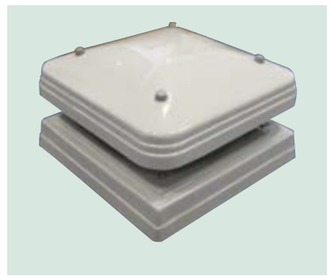
- Easy to install
- Quiet operation
- Energy efficient: on demand ventilation

***iFan* box range**

- Box fans incorporating an integral intelligent control unit (ICU), plus sensors and/or switches
- Delivering demand control ventilation – from maximum to trickle (20%) or stop
- Reduces ventilation energy consumption and running costs

DSJ - Roof Extract Unit

- Sizes: 200mm to 1000mm Ø
- Volume flow: up to 6.3m³/s
- Static pressure: up to 200 Pa
- Temperature capability: up to 50°C
- Robust, fibreglass casings
- Mounting angle up to 30°
- Role: General ventilation and/or extraction
- Aerofoil Impeller
- Options:
  – Speed controller types: Electronic, Transformer or Inverter



SuperLite Roof Unit

- Volume flow: up to 4.3m³/s
- Static pressure: up to 540 Pa
- Operating temperature range: -30°C up to +70°C
- High efficiency axial impellers
- Role: General ventilation and/or extraction
- Options:
  Speed is 100% infinitely variable using auto transformers or electrical control

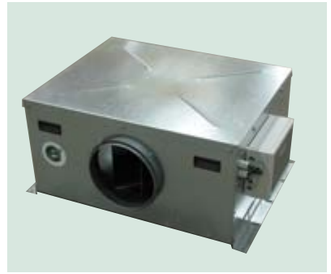
Metal and Plastic Tube Fans

- Sizes: 100mm to 315mm Ø
- Volume flow: up to 0.47m³/s
- Static pressure: up to 625 Pa
- Speed control as standard
- Low noise
- Compact design
- Low SFP values

Multi-functional lightweight fans for local or zoned general air movement applications.

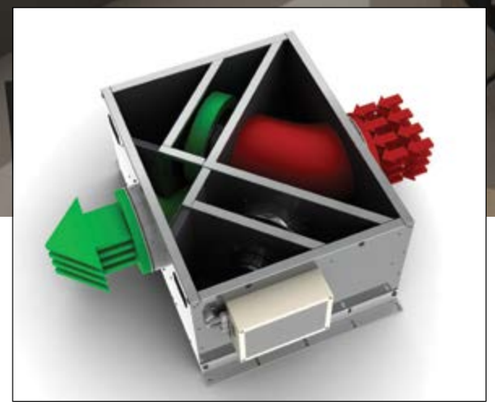
SingleBox

- Sizes: 125mm to 400mm Ø
- Volume flow: up to 1.66m³/s
- Static pressure: up to 510 Pa
- Operating temperature: up to 60°C
- Horizontal or vertical mounting
- Acoustically lined box
- Easy maintenance
- Neoprene seals on inlet/outlet spigots
- Low noise at higher pressures
- Impeller: forward curved



EC TwinBox

- Sizes: 125mm to 630 and Ø connection spigots
- Volume flow: up to 3.5m³/s
- Static pressure: up to 1250 Pa
- Max operating temperature through fan: 60°C
- Single or twin fan (duty/standby) options
- Horizontal or vertical mounting
- Thermal and acoustic insulation
- Impeller: backward curved centrifugal



Centrifugal fans

For general air movement and special applications.

Including options for:

- Emergency high temperature smoke extraction *(see pages 8-9)*
- ATEX environments

Centrimaster GT

- High temperature (smoke extraction) capability: 400°C for 2 hours
- Low noise
- Sizes: 200mm to 1400mm Ø
- Volume flow: up to 50m³/s
- Static pressure: up to 3300 Pa
- Options:
  Direct or belt drive (single inlet version. Double inlet version belt drive only)

Centripal EU

- Operating temperature up to 350°C in continuous use
- High energy efficiency – over 80%
- Sizes: 355mm to 1400mm Ø
- Volume flow: up to 40m³/s
- Static pressure: up to 20000 Pa
- Options:
  – Impellers choice: 11 widths and 6 fixed geometry types
  – Drive choice: direct or belt drive (as standard); coupling drive (option)
  – Safety switch to ISO 12499

Europal

- Operating temperature up to 350°C in continuous use
- High energy efficiency – over 85%
- High aerodynamic range
- Sizes: up to 2500mm Ø
- Volume flow: up to 100m³/s
- Static pressure: up to 26000 Pa
- Options:
  – Impellers choice: 10 widths and 4 fixed geometry types
  – Impellers reinforced for particulate handling
  – Drive choice: belt or coupling drive

Standard features

- Fully assembled
- Motor protection IP55

Range options

- Drive options
- Impeller choice

We Bring Air to Life

Fläkt Woods is a global leader in air management. We specialize in the design and manufacture of a wide range of air climate and air movement solutions.

Our collective experience is unrivalled. We are constantly aiming to provide systems that precisely deliver required function and performance as well as maximum energy efficiency.

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