


low carbon **-ec**
centrifugal 'Pod' blowers





torin-sifan

For over 100 years, torin-sifan have been a leader in servicing the Air Movement requirements of our customers. From our Head Office and Manufacturing facility in the United Kingdom we supply annually over 1 million products to the International Air Movement Industry.

Fifty percent of our production volumes are products incorporating low carbon  technology with this growing significantly each year due to European legislation requirements.

international markets


Our customers are involved in numerous diverse markets ranging from Heating, Ventilation, Air Conditioning and Refrigeration industries to Business Machines, Telecommunications & Domestic Appliances. Our diverse range of standard and customised products are well suited to the needs of these sectors and more.

With sales evenly split between our home market in the UK and numerous export customers, all serviced by our technically competent international sales team, our business is truly

international. Support is provided by experienced product development and applications engineers backed up by an excellent research and development facility.

technology partners

Understanding the needs of our customers, the legislation that affects our industries and creating value & innovation is at the very heart of our business. This is reflected in a clear and continual commitment to research & development.

This philosophy has helped torin-sifan to be at the forefront of our industry in the development of a full range of energy saving low carbon  products. This has positioned us as the preferred choice for energy efficient Air Movement solutions in various markets where local legislation is demanding low carbon technology.

torin-sifan is an **ISO 9001** approved organisation.



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centrifugal 'Pod' blower pedigree

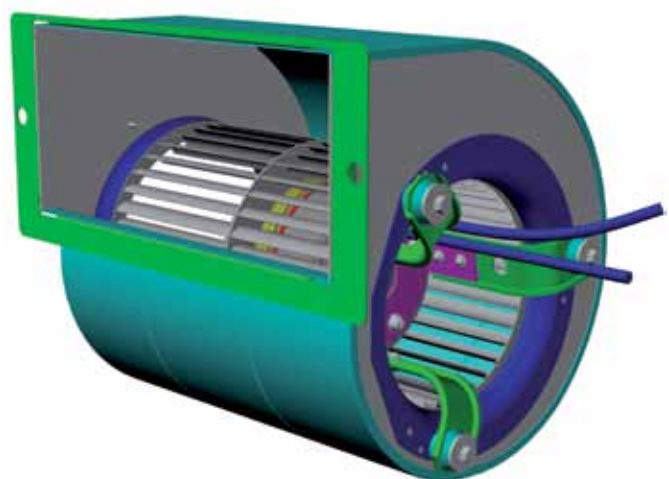
torin-sifan has established itself as a leading supplier in Europe for double inlet centrifugal 'Pod' blowers which have been in manufacture for many years.

Literally millions of torin-sifan 'Pod' blowers have been supplied to the European air movement market over the years.

Whilst traditionally this product range has been powered by AC motor technology, torin-sifan launched at ISH 2009 its low carbon ^{ec} range which has become a very popular product in applications where European legislation demand the highest efficiency levels.

Our latest generation low carbon ^{ec} range offers the ultimate in efficiency and controllability with full onboard integrated electronics. Lowest specific fan powers and low noise are key features of this range.

Outside of our standard ranges, many custom housings, impellers and detail features are possible as well as painted finish.





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low carbon technology


low carbon  motors have grown in popularity enormously over the past five years in many areas of Europe. This is due primarily to the significant energy reduction legislation that has been introduced and the demands this has placed on the product development plans of manufacturers.

As a result, it is very clear to see why  motors have become the logical choice for manufacturers as they seek to develop products with best in class energy performance for their customers.

Firstly,  motors are approximately 30% more efficient than their AC counterparts due to the different methods they employ to generate torque. An AC motor creates torque by means of inducing current through copper windings or aluminium bars, a process that consumes energy. However an  motor uses permanent magnets to create an interactive magnetic field. The generation of this interactive magnetic field in an  motor by permanent magnets does not consume energy.

In addition, the 30% motor efficiency benefit can be significantly enhanced by the incorporation

of a full electronics package, either on-board or separate to the motor. This offers the flexibility of infinitely variable speed control and the ability for the electronics to convert mains voltage to DC supply at a level optimal for efficient motor operation. All of this is self contained within the motor electronics.

In an  motor, commutation is achieved by the motor's electronic circuitry. This provides exactly the required current, at exactly the right time, for precise control of the motor throughout its speed range. The same electronics can also self generate a 10V output to allow control of the motor via a potentiometer. In addition the same electronics is capable of receiving inputs (PWM/ 0-10V) from external sources. This allows for the precise control of various conditions such as humidity, CO₂, temperature, pressure etc. In any given situation, the fan can be made to move the exact amount of air required at a given point in time, through speed regulation.



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Low Carbon Technology

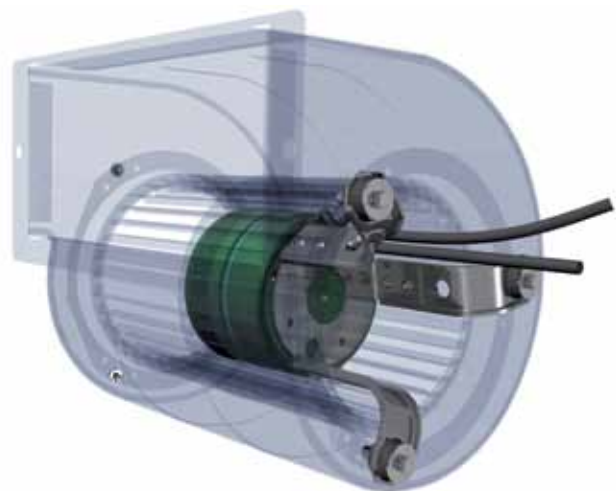
The use of speed control has a significant effect in reducing energy consumption. Reducing the speed of an **ec** motor by 50% can reduce its power consumption by a factor of 8 in an air moving application. Running a fan faster than required is therefore very wasteful.

Furthermore, AC Fans have a peak efficiency at a single point on their operating curve, with efficiency varying substantially under speed control. **ec** motors on the other hand have an efficiency that can be made to vary very little across the full speed profile of the fan.

It is also worthy of note that **ec** motors operate at very low noise levels under speed control and do not generate the characteristic whining noises associated with AC motors when speed controlled.

Combining the efficiency of the **ec** motor and the efficiency available from speed control can therefore result in up to 75% overall efficiency gains for **ec** motors when compared to their AC equivalents.



- **Efficiency** - Up to 75% more efficient than a traditional AC motor.
- **Control** - Infinite speed control by 0-10Vdc without loss of efficiency.
- **Intelligence** - Programmable for constant speed and protection features.
- **Low Noise** - For quiet operation.
- **Low specific fan power** - for best in class performance.






low carbon centrifugal 'Pods'

description

The torin-sifan centrifugal  'Pod' is a range of forward curved fans powered by intelligent, controllable and highly efficient  motors with integrated drive electronics.


The fans range in size from 133mm to 200mm diameter double or single inlet, driven by  motors with a power input of approximately 90W.

The motor is Class B insulated and has maintenance free ball bearings.

Fan cases and impellers are manufactured from corrosion resistant galvanised steel.

Fan impellers are dynamically balanced to ISO 1940 Grade 6.3.

This type of fan finds application in, amongst others, ventilation units, air handling units, air curtain, heat recovery, fan coil and especially where low specific fan power & noise is an important consideration.

Apart from the efficiency of the  'Pod', their built-in intelligence and inherent controllability gives the designer considerable scope when specifying these fans.



customised solutions available

Please discuss any customisation of these products that you may desire as, in many instances, this can be accommodated very easily.

The products in this brochure are examples of what is possible. Our range is very large, so please speak to us about your specific needs.

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features & benefits

standard features

- Mains power input of 230V, 50 or 60Hz, single phase.
- Galvanised steel housing & Impeller.
- Soft start.
- Speed control without loss of efficiency by either 0-10Vdc or PWM input signals.
- 10Vdc output integrated into the motor so speed can be controlled by a simple potentiometer without the need for an external signal.
- Tacho output signal.
- Locked rotor protection.
- Motor current limitation.
- Over temperature protection.
- CE/ EMC certified.
- **Lowest specific fan power and noise in it's class**


optional features:

- Programmable constant flow.
- Custom designed housing & impellers.
- Painted Finish.

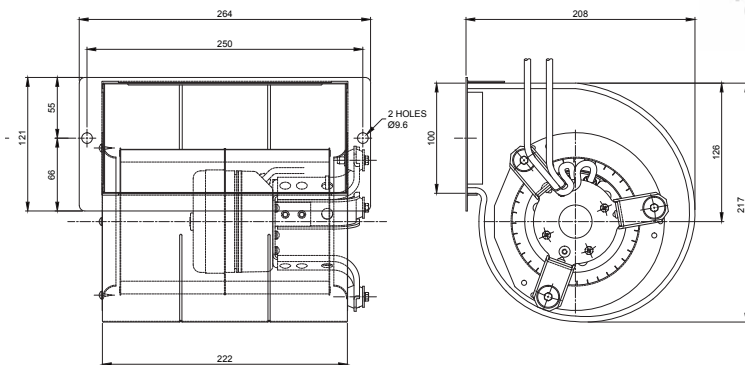
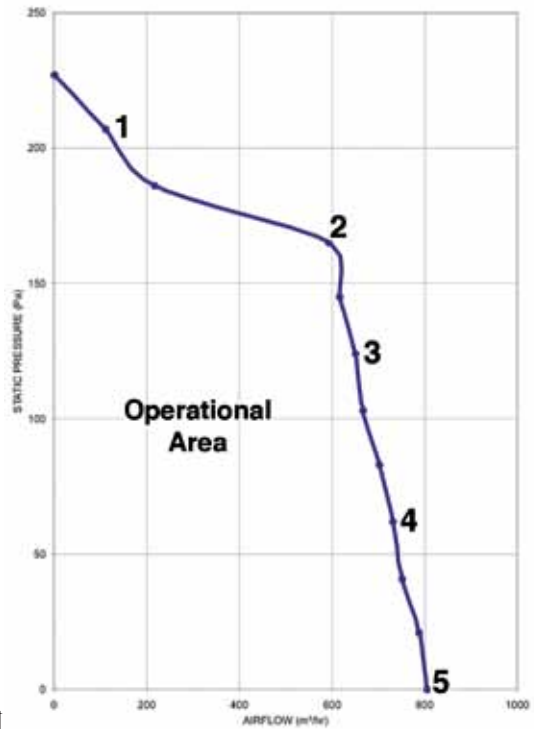




low carbon 'Pod' blowers forward curved 133mm

DDL133-190 90W  motor	
Supply (V/Ph/Hz)	230/1/50 or 60
Max Airflow (M3/Hr)	805
Max Current (A)	0.81
Max Input Power (W)	90
Max Speed (rpm)	1985


DDL133-190 Performance Data			
Data Point	Speed (RPM)	Current (A)	Input Power (W)
1	1993	0.32	34
2	1817	0.81	90
3	1656	0.80	87
4	1444	0.76	83
5	1240	0.72	78



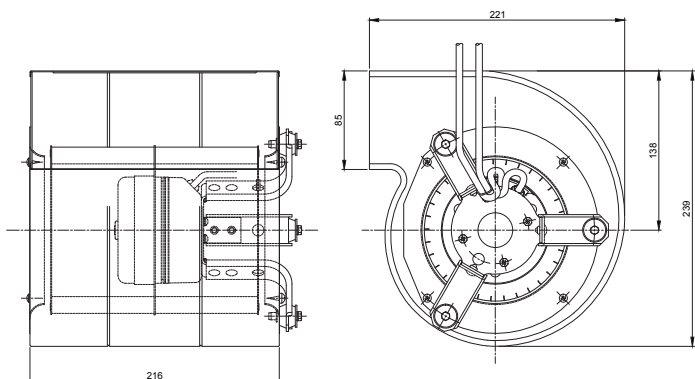
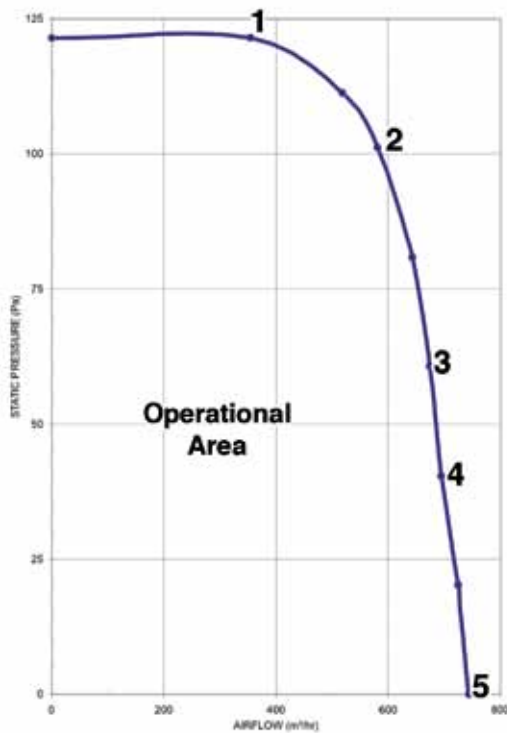
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low carbon 'Pod' blowers forward curved 146mm


DDL146-180 73W  Motor	
Supply (V/Ph/Hz)	230/1/50 or 60
Max Airflow (M3/Hr)	743
Max Current (A)	0.61
Max Input Power (W)	73
Max Speed (rpm)	1395

DDL146-180 Performance Data			
Data Point	Speed (RPM)	Current (A)	Input Power (W)
1	1395	0.31	37
2	1395	0.55	65
3	1317	0.60	72
4	1242	0.59	70
5	1098	0.56	76

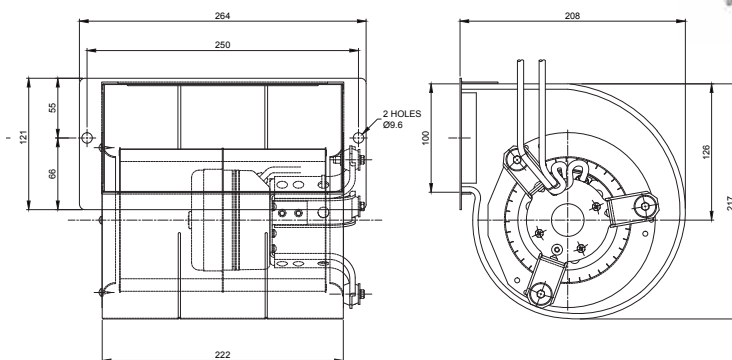
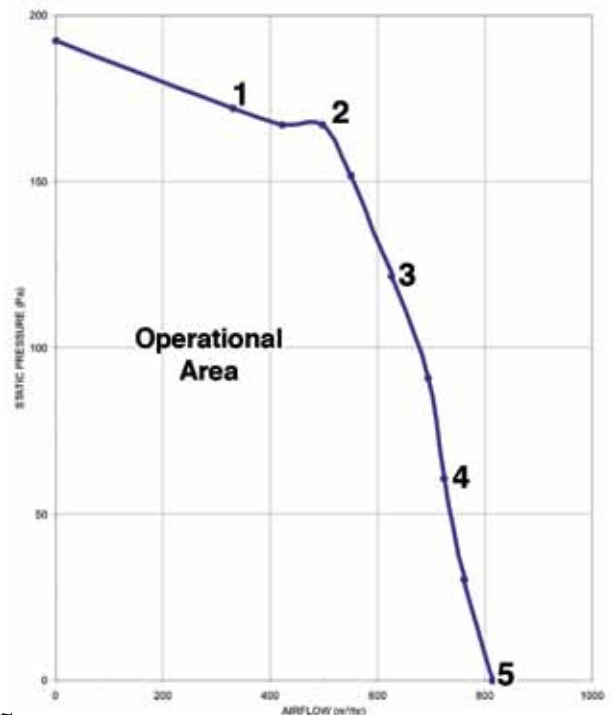




low carbon 'Pod' blowers forward curved 160mm

DDL160-204 72W  motor	
Supply (V/Ph/Hz)	230/10/150 or 60
Max Airflow (M3/Hr)	761
Max Current (A)	0.61
Max Input Power (W)	72
Max Speed (rpm)	1368

DDL160-204 Performance Data			
Data Point	Speed (RPM)	Current (A)	Input Power (W)
1	1368	0.41	46
2	1344	0.61	72
3	1152	0.58	68
4	999	0.56	65
5	834	0.54	61



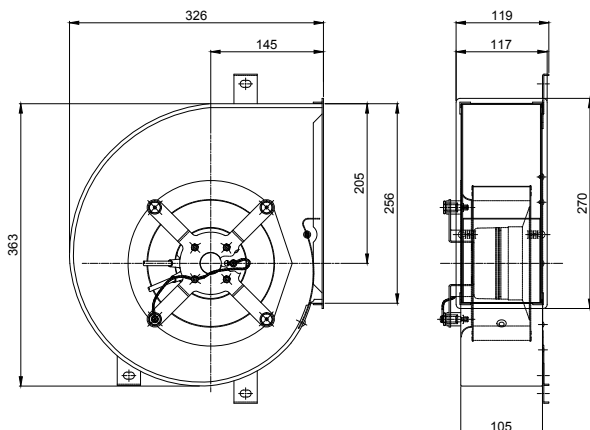
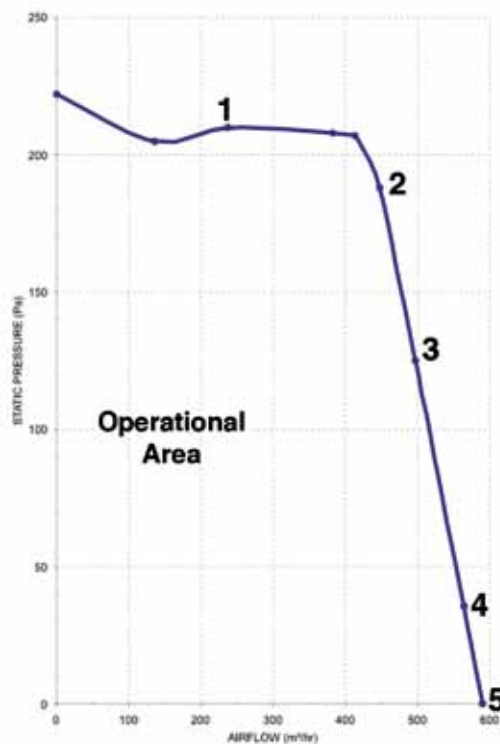
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low carbon **-ec** 'Pod' blowers forward curved **200mm**

DDL200-75 94W -ec motor	
Supply (V/Ph/Hz)	230/1/50 or 60
Max Airflow (M3/Hr)	590
Max Current (A)	0.79
Max Input Power (W)	94
Max Speed (rpm)	1396

DDL200-75 Performance Data			
Data Point	Speed (RPM)	Current (A)	Input Power (W)
1	1396	0.44	48
2	1350	0.79	94
3	1180	0.74	88
4	956	0.70	82
5	904	0.70	81



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Greenbridge, Swindon, Wiltshire SN3 3JB UK

t: +44 (0)1793 524 291 f: +44 (0)1793 486 570

e: sales@torin-sifan.com www.torin-sifan.com
