

EC AIR CURTAINS



Energy efficient air curtains

EC technology

EC technology (electronically commutated) combines AC and DC voltages, bringing the best of both technologies; the motor runs on a DC voltage, but with a normal AC supply.

The EC motor transforms the voltage within the motor. The non-rotating part of the motor (stator) includes an electronic PCB board which incorporates power transformation AC to DC, as well as the controls.

EC motors have no slippage losses, thus increasing efficiency versus AC motors.

Advantages and benefits

The new EC air curtains are efficient in reducing the running cost by up to 65% using EC instead of AC fans.

- Energy savings: minimum power consumption and better efficiency than AC equivalent.
- Low motor temperature: for longer lifetime than AC equivalent
- Simplicity: electronic and power transformation are completely integrated within the motor.
- High performance: speed can be driven up to 3600rpm.

Available EC air curtains: Essense Neo, Finesse, Invisair, Kool, Rotowind, Rund, Smart, VCP, Windbox, Windbox Recessed and Zen.

EC motor principle

- Permanent-magnet brushless DC motor within the rotor.
- The stator is driven by electronic switches (which replace the Carbon brushes), controlled by a microcontroller.
- Electronic system (hall effect sensor or software is used to recognize the rotor position).
- AC operate 230Vx1, valid for 50/60Hz.

EC vs AC air curtain - energy saving example

How much money can I save using an EC air curtain?

Example:

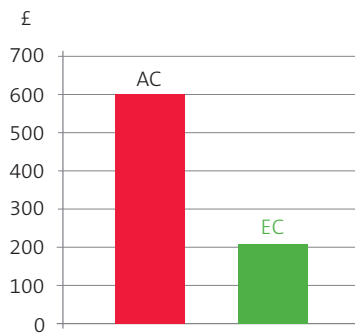
Door dimension: 2m width by 3.8m height

Running time: 12 hours/day, 5 days/week, 52 weeks (~ 1 year)

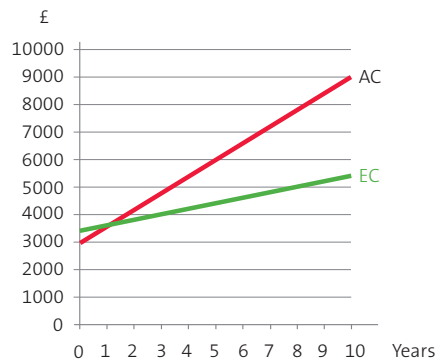
Energy cost: £0.15 kW/hr

Selected unit: AC - G2000 EC - ECG2000

	AC air curtain	EC air curtain	Difference
Total fans power	1.284 kW	0.450 kW	-0.834
Air curtain price	£4,014	£4,317	£303.00
Total fan energy consumption	4006 kW/hr	1404 kW/hr	-2602
Energy cost	£601	£211	-£390.00
CO ₂ emmissions	2111 kg	740 kg	-1371

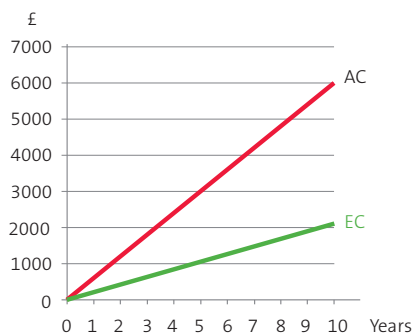


1 year energy cost

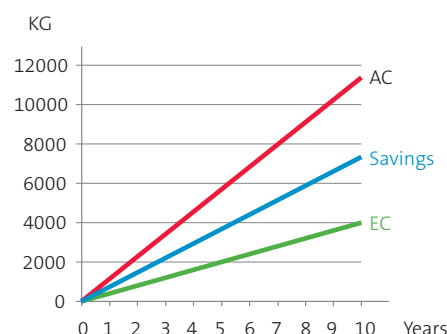


Payback period

Result: The payback period for the cost of the EC fan upgrade is 1 1/2 years. After this time, energy usage will be lower and savings will be made. Installing an EC air curtain will also reduce CO₂ emissions to the environment.



10 years energy cost



10 years CO₂ emissions