

[www.ferrariventilatori.com](http://www.ferrariventilatori.com)



ErP Energy related Products



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The Ferrari Green Breath logo, featuring a stylized fan or turbine icon composed of concentric circles of dots, with the text "FERRARI" in a bold, white, sans-serif font above "GREEN BREATH" in a smaller, white, sans-serif font, all set against a green background with a swirling pattern.

FERRARI  
GREEN  
BREATH

## ErP The wind of tomorrow

With the adoption of the Kyoto Protocol, the European Union has taken the commitment to reduce energy consumption and CO2 emissions by 20% by 2020.

To achieve this target, on 21 October 2009 Europe Directive 2009/125/EC was approved, referred to as the ErP Directive (Energy-related Products).

On 30 March 2011 this directive was implemented with Regulation no. 327/2011, which defines the ecodesign requirements for the production of fans driven by motors with an electrical input power between 125 W and 500 kW.

The regulation will be applied in two tiers, the first starting from 1 January 2013 and the second, more restrictive, from 1 January 2015.

## New performance requirements

The placing of products on the European market envisages conformity with the minimum levels of target energy efficiency established by the regulation. The optimal energy efficiency ( $\eta_e$ ) of the fan is calculated using a series of assessments including:

- Fan efficiency ( $\eta_r$ ), calculated in accordance with the ISO5801 standard;
- Motor efficiency ( $\eta_m$ );
- Transmission type ( $\eta_t$ ): direct or by means of other less efficient devices, such as for example V-belts;
- Compensation factor ( $C_m$ ), with penalties in case of parts not assembled by the manufacturer;
- Partial compensation factor ( $C_c$ ), with efficiency increases if an inverter is used to operate the fan.

Fans placed on the market from 1 January 2013 must bear CE marking and must also display additional information regarding conformity with the directive. The information plate must show the following:

- Overall efficiency of the fan ( $\eta_e$ );
- Measurement category with respect to the test methods applied (type A, B, C or D);
- Efficiency category (static or total);
- Target energy efficiency (optional);
- Energy efficiency of the fan operating at the point of maximum efficiency;
- Use or otherwise of an inverter.

$$\eta_e = \eta_r * \eta_m * \eta_t * C_m * C_c$$

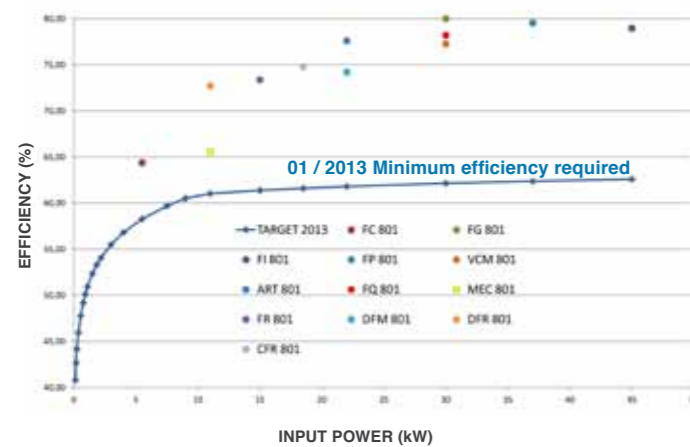
## ErP exclusions

Regulation 327/2011 also defines the product types to which it is applicable, excluding the following in particular:

- ATEX fans for potentially explosive atmospheres;
- Fans for extraction of fumes suitable for operation only in emergency conditions;
- Fans channelling air at temperatures higher than 100°C;
- Fans for moving non-gaseous substances;
- Fans designed for operation in environments that are toxic, corrosive or inflammable, or that contain abrasive substances;
- Other fan types not strictly associated with our production range.

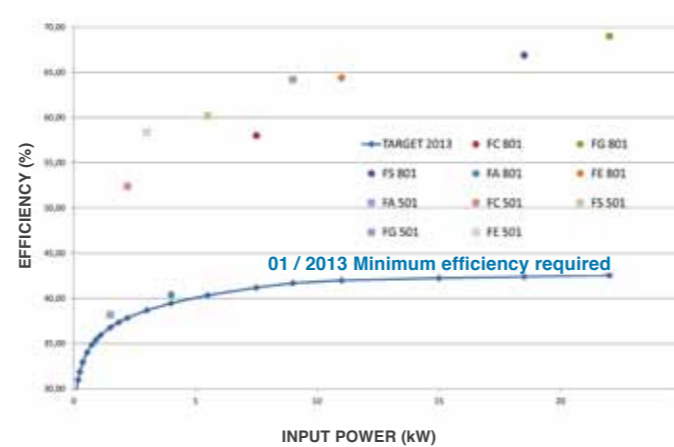
## ErP Energy related Products

### CENTRIFUGAL BACKWARD BLADES



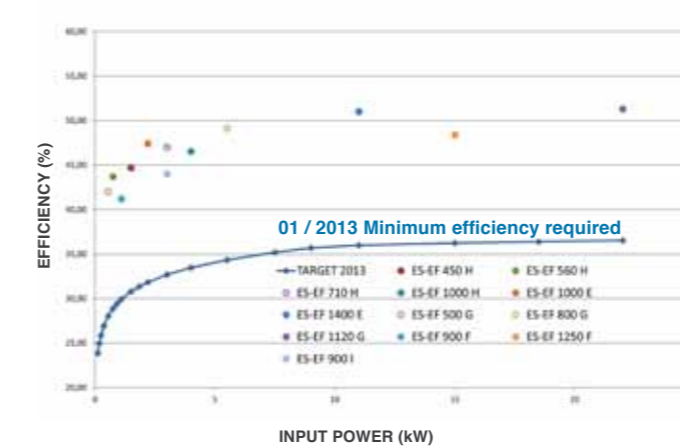
Our vast production range, with over 20 lines of centrifugal fans and 10 lines of axial fans, guarantees the possibility of always finding the most suitable solution for all your needs. The chart above shows a positioning analysis of the various sizes of the three main types

### CENTRIFUGAL FORWARD BLADES

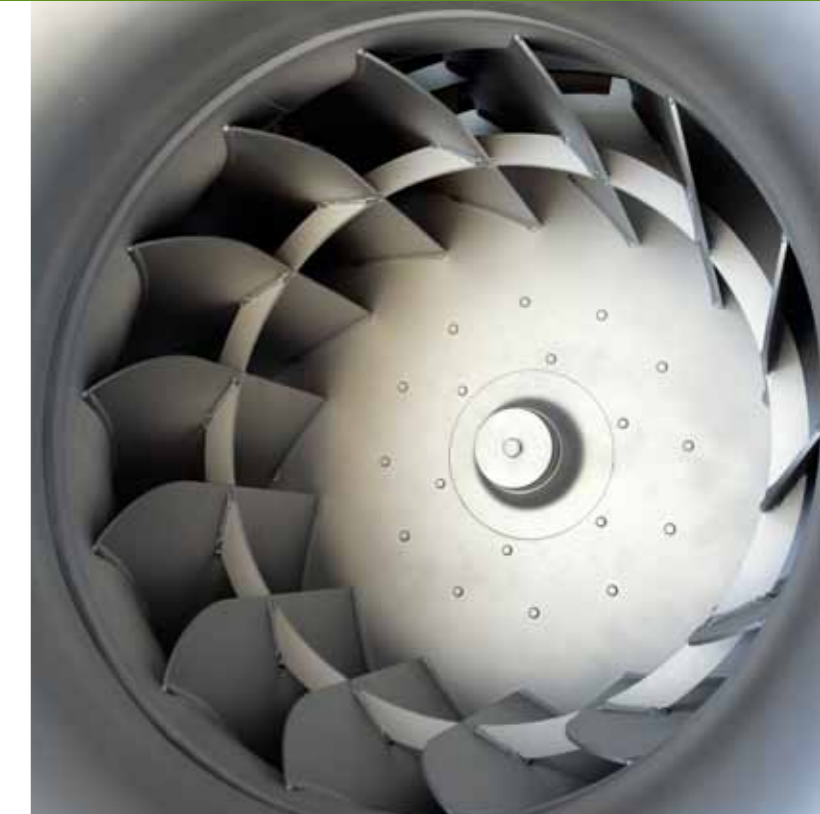


of product. The three diagrams show the curve with the minimum efficiency levels required by Regulation 327/2011, and the points above the curve show the efficiencies of the various product lines. The analysis shows that all our products guarantee an efficiency far

### AXIAL ES-EF



higher than the levels required by the regulation, and our customers can therefore be certain that by choosing them, their choice is friendly to the environment.



# WE ARE ECOREADY

For 50 years Ferrari Ventilatori SpA has sought to achieve sustainable growth through the responsible use of resources.

Thanks to this philosophy, our products require no modifications to be able to comply with the requirements of the ErP Directive. We use selection instruments to provide our customers with fans with the best possible efficiency. This is also made possible by our FSelector software, used to calculate annual operating costs for every fan and to immediately select the fan with the best efficiency.