

## Saving Energy in Beverage Merchandisers



### BENEFITS

- Save 22 percent of beverage merchandiser costs<sup>1</sup>
- Payback periods of less than 4 months

### APPLICATIONS

- Refrigerated beverage merchandisers

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# Saving Energy in Beverage Merchandisers

Beverage merchandisers are the most common type of plug in commercial refrigerators and are typically found in supermarkets and convenience stores.

In the United States, beverage merchandisers account for about 8 percent of packaged commercial refrigeration energy consumption<sup>2</sup>, and in Europe an estimated 6.3 million units are in use<sup>3</sup>.

Because of their large numbers, beverage merchandisers are being included in new legislation targeting their vast energy saving potential.

## Energy savings

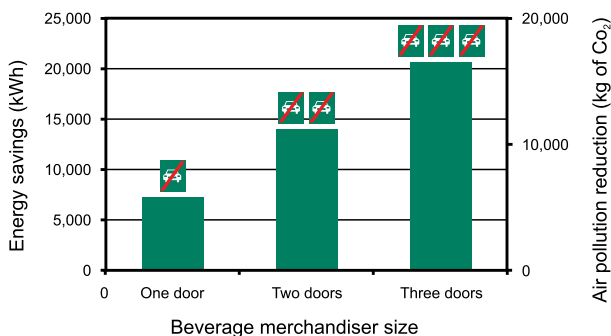
One door beverage merchandisers typically have one shaded pole motor driving the evaporator fan, and one driving the condenser fan.

The efficiency rate of these motors is in the order of 18%. This means that 82% of their energy consumption is transferred as waste heat to the environment, and has to be removed or cooled down again by the refrigeration and air conditioning system, causing additional consumption of energy.

ECR motors instead have efficiency rates up to 65% that dramatically reduce motor direct energy consumption, and yield additional energy savings by producing minimal waste heat.

ECR motors' efficiency also reduces the load on the compressor and thus its operating time, allowing further energy savings.

**Energy savings and air pollution reduction in beverage merchandisers with ECR motors<sup>4</sup>**



In terms of environmental impact, this means that each one door beverage merchandiser using ECR motors saves over 5,000 kg of carbon emissions during its life, the equivalent of taking one car off the road for a year; and two and three door beverage merchandisers save twice and three times this amount respectively.

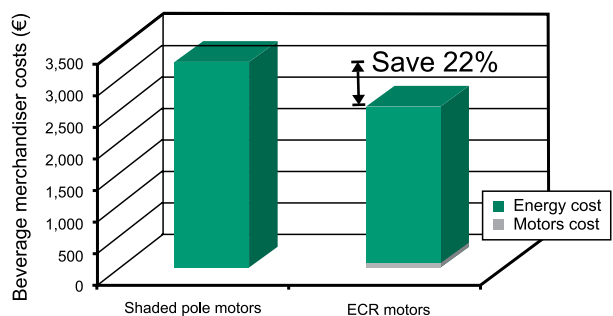
In Europe alone, where around 800,000 beverage merchandisers are sold each year<sup>5</sup>, this means potentially saving millions of tons of carbon emissions, or taking the equivalent of over one million cars off the road for one year.

## Cost savings

ECR motors reduce the overall cost of operating a beverage merchandiser by 22 percent, even when the additional initial cost of ECR over shaded pole motors is taken into account.

This, together with the maintenance savings and longer life of ECR motors when compared to shaded pole, and their very short payback periods, make Wellington's ECR a very cost effective solution for new beverage merchandisers and retrofit alike.

**Impact of replacement of shaded pole motors with ECR on beverage merchandiser costs<sup>6</sup>**



**Wellington's ECR motors and fans were developed as new and retrofit energy saving replacements of shaded pole motors used in commercial refrigerators and freezers.**

<sup>1</sup> For a one door beverage merchandiser with estimated life of 8 years, two motors, and price of electricity 0.11€/kWh.

<sup>2</sup> United States Consortium for Energy Efficiency. [www.cee1.org](http://www.cee1.org)

<sup>3</sup> European Commission Directorate General for Energy and Transport (DGTREN).

<sup>4</sup> Beverage merchandiser's life is estimated at 8 years. Carbon dioxide emission factor and equivalence from [www.energystar.gov](http://www.energystar.gov)

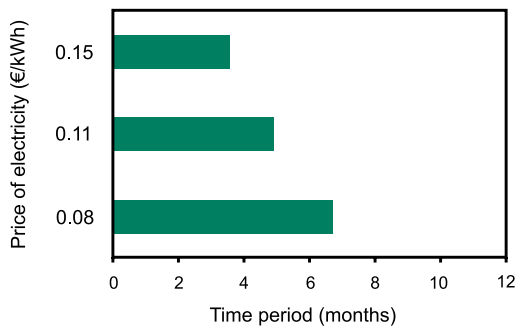
<sup>5</sup> European Commission Directorate General for Energy and Transport (DGTREN).

## Payback period

ECR motors and fans have very short payback periods due to:

- high direct motor energy savings
- waste heat savings
- reduced compressor operating time
- low maintenance and service cost

**ECR motors payback period<sup>7</sup>**



**With short payback periods and high energy savings the ECR series allows supermarkets and convenience stores to lower financial costs while preserving energy.**



200 mm axial fan (shaded pole motor)



**Drop in  
replacement**



200 mm ECR axial fan

## Product features

ECR motors are electronically commutated (ECM), brushless DC motors. Top quality electronics and design make ECR motors extremely efficient, quiet and reliable.

Extremely low levels of noise and vibration are achieved with our unique low torque ripple motor design.

Long design life and reliability are the result of Wellington's moisture proof patented design, and allow maintenance and service cost savings.

## Drop in replacement of shaded pole motors

Our motors use the same mounting systems as shaded pole motors and are provided with a plug in connection for easy, fast replacement. They also fit the same fan blades and accessories as traditional shaded pole motors.

ECR fans are available in all standard refrigeration sizes and pitches.

**ECR standard features make it easy to replace traditional shaded pole motors in all beverage merchandisers, with no need for costly adjustments.**

<sup>6</sup> For a one door beverage merchandiser with estimated life of 8 years, two motors, and price of electricity 0.11€/kWh.

<sup>7</sup> For a one door beverage merchandiser using two ECR motors. Payback period calculation includes reduced compressor operation savings.

Wellington has made a strong commitment to providing standard and custom design solutions that will lower your financial costs while preserving key natural resources.

For information about our full line of products and our “Total Integration” custom design service, visit us on our website at [www.wdtl.com](http://www.wdtl.com) or contact a Wellington office near you.

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