



our environmental contribution to reduced CO₂ emissions



It is now universally recognized that it is necessary to reduce CO₂ emissions via specific measures aimed at lowering traditional energy consumption.

Today's reality is that there are millions of low powered electric motors utilised in both commercial refrigeration display cabinets and bottle coolers. Manufacturers of such appliances currently have two alternatives concerning the choice of motor to install: a traditional shaded pole motor, or an electronic motor.

From a technical stance the characteristics required by the manufacturer are the same: both motors require a yield of 8 Watts, in order to power a 230 mm diameter fan blade. But what differentiates the traditional motor from the electronic motor is the energy absorption as is illustrated below:

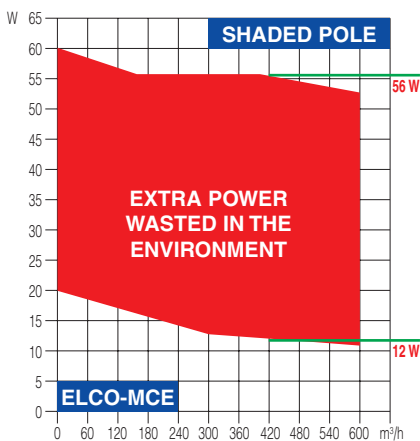
- **Traditional shaded pole motor**
this motor absorbs 36 watts in order to yield 8 watts, an approximate 20% efficiency ratio.
- **Electronic motor**
this motor absorbs 12 watts in order to yield 8 watts, an approximate 65% efficiency ratio.

The importance of the use of a energy saving motor can be seen if we look at the impact on a single Supermarket, where there are approximately 200 meters of display cabinets installed, that are equipped with approximately 200 motors.

If we consider the average cost per KWh as being 0,11 € and emissions as being equivalent to 0,43 Kg of CO₂ per KWh consumed, the benefit of substituting traditional shaded pole motors with electronic motors could be quantified as follows:

- Annual saving of approx. 68.500 KWh;
- Annual saving of approx. 7.500 €;
- Reduction of CO₂ emissions equivalent to approx. **30 Tons**.

In payback terms it should be emphasised that the additional cost of the high efficiency electronic motor is more than covered by the energy costs saved and we estimate that the net incremental revenue streams are positive in a matter of months.



16W Shaded pole motors with 10" impeller



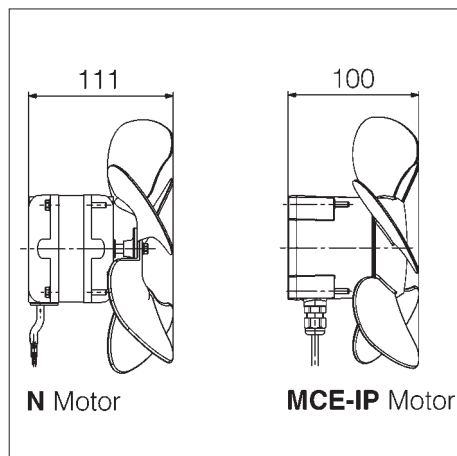
Furthermore, it should be emphasised that Elco, as a result of the fact that approximately 500.000 motors are already functioning in the field, has already contributed to a reduction of CO₂ emissions amounting to approx.

55.000 Tons per year.

Moreover, in order to verify the high efficiency of the Elco electronic motor an empirical independent survey was conducted by external consultants who monitored a specific area of supermarket display cabinets at the Tortona IPERMERCATO, for a period of two months. The survey was conducted measuring the energy consumption of over 200 traditional shaded pole motors. These traditional motors were then substituted by Elco electronic motors and the energy consumption measured over a similar time frame. The results showed the following:

- Energy absorbed by traditional shaded pole motors 619.466 KWh;
- Energy absorbed by electronic motors 476.979 KWh;
- An overall saving of 142.487 KWh, some 23% of the total. (*)
- Reduction of CO₂ emissions equivalent to approx. **61 Tons.**

(*) Optimizing compressor utilization.



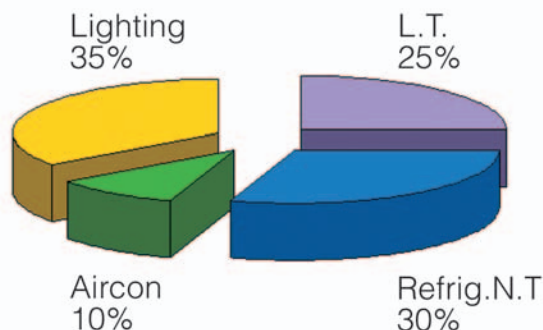
A similar test was undertaken by an important UK display cabinet manufacturer who utilises exclusively Elco electronic motors. The results of these tests confirmed not only the Tortona IPERMERCATO analysis but also that a more uniform airflow could be achieved as well, due to the better motor's torque.

The advantages compared with traditional shaded pole motors are:

- **High efficiency;**
- **Maximum water protection in the IP 66 version;**
- **Easy to fit and retrofit;**
- **Full use of standard accessories;**
- **Ease of replacement with traditional shaded pole motors.**



Primary Energy Usage in a Supermarket



ELCO®

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