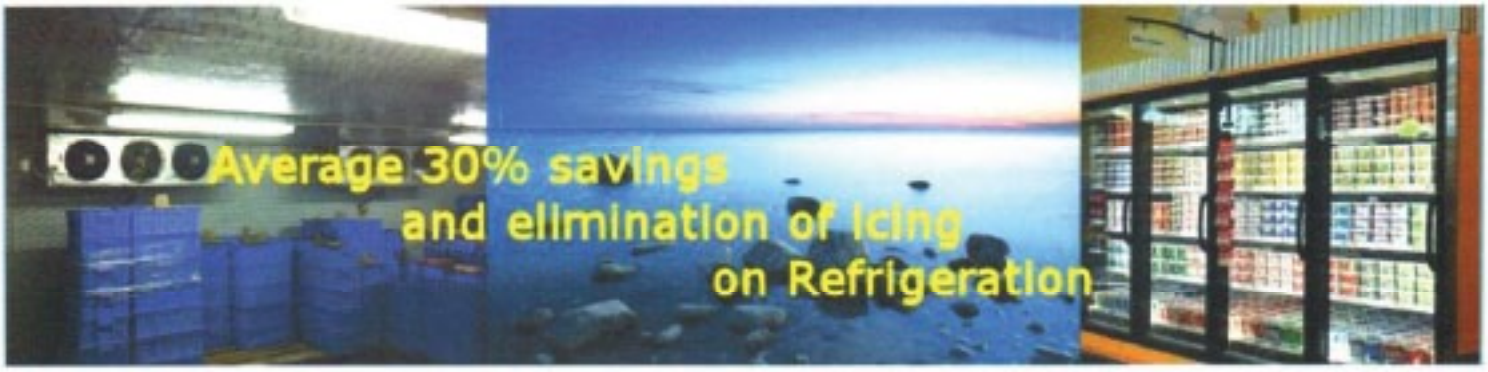
negawatt energy solutions

EMG ENERGY MANAGEMENT SOLUTIONS

Product Brochure COOLNOMIX AR-01®



How is this possible?

Internationally patented **COOLNOMIX Optimized Refrigerant Supply (ORS®)** encompasses two key processes:

- delivery of the required fixed-minimum space temperature
- optimisation of the running-time of the compressor to minimize energy consumption

Since the compressor consumes about 95% of all the energy used by a refrigerator, **ORS®**'s minimization of its running-time delivers world-beating energy savings at an average 30% worldwide.

COOLNOMIX® applications

COOLNOMIX® delivers these awesome savings through being retro-fitted to existing refrigerators of any size and any kind. Retrofitting takes about two hours to complete and there are zero maintenance requirements. **COOLNOMIX®** is already delivering energy savings around the world on:

- industrial refrigerators used in the Manufacturing sector; e.g. food manufacturing or pharmaceuticals
- walk-in refrigerators used in the Food and Beverage sector
- Retail sector refrigerators; vegetable and dairy display units; cold drink cabinets
- wine warehousing refrigeration

COOLNOMIX® benefits

- Average energy savings of 30%.
- Elimination of icing, thereby removing the need for de-icing cycles.
- Improved space temperature stability and tighter compliance with food safety or wine quality standard certifications.

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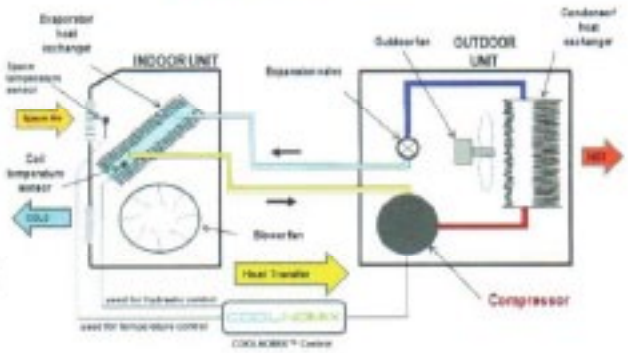
More about Optimized Refrigerant Supply (ORS®)

Refrigerator manufacturers make use of **thermodynamic** (temperature) thermostats alone when controlling compressors. COOLNOMIX **ORS®** employs data from two temperature sensors for determining when work is needed from the refrigerator's compressor.

- the first sensor replicates the function of the thermodynamic (temperature) thermostat and is employed by COOLNOMIX **ORS®** to deliver the required fixed-minimum space temperature as a priority
- the second sensor measures the temperature of the cold-supply air from the refrigerator and this is used as a proxy to determine when the compressor has completed its **hydraulic** work of fully compressing the refrigerant gas

Of course, once the refrigerant gas is fully compressed, continuing to run the compressor is a waste of energy and yet this is what use of **thermodynamic** measurement alone persists in doing.

With the additional information derived from its second sensor, COOLNOMIX **ORS®** is able to stop the compressor whilst the refrigerator uses the reservoir of cooling capacity that has been created to cool the space. Once COOLNOMIX **ORS®** determines that further cooling capacity is needed, the compressor is started again until its **hydraulic** work has been completed once more.



Since COOLNOMIX **ORS®** prevents over-running of the refrigerator's compressor, there is never a build-up of ice on the evaporator coils that requires a de-icing cycle.

All refrigerators using COOLNOMIX **ORS®** to deliver energy savings are required to display our distinctive label as below: