

FREEZE DRYING BECOMES ENVIRONMENTALLY FRIENDLY



SUSTAINABLE PERFORMANCE





Natural, non-toxic, non-flammable, and readily available, air is the refrigerant of the future and fits seamlessly with the innovative freeze-drying solutions developed by IMA Life. Fully compliant with environmental regulations, KryoAir avoids using gases that have even a minimal impact on the ozone layer and thereby on global warming.

EFFICIENCY IS GREEN TOO

Efficiency leads to lower energy consumption, making KryoAir even more green. By implementing an energy storage system that will store cold energy during idle periods when the cooling demand is low and releasing it at key times during the lyo cycle, KryoAir provides a highly efficient solution suited to customary freeze-drying needs.

 **KryoAir** exceeds the efficiency of traditional compressors by 10%, making it **economically more sustainable** too.



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IMA S.p.A. reserves the right to make any changes to the described machine characteristics.

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POWER IS IN THE AIR.

IMA LIFE
Aseptic Processing & Freeze Drying Solutions

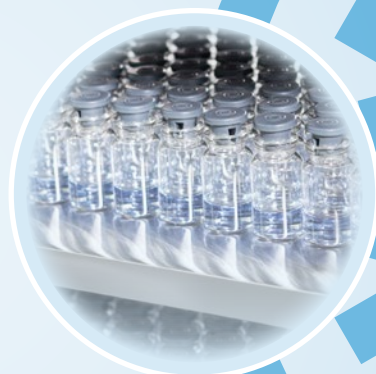
THE ECO-FRIENDLY, AIR-BASED REFRIGERATION SYSTEM


KryoAir fits perfectly into the new generation of freeze-drying solutions developed by IMA Life. Using compression, cooling and expansion of air, a 100% green refrigerant, this technology is efficient, powerful and has a minimal impact on the environment.

HIGH PERFORMANCE, LOW TEMPERATURES

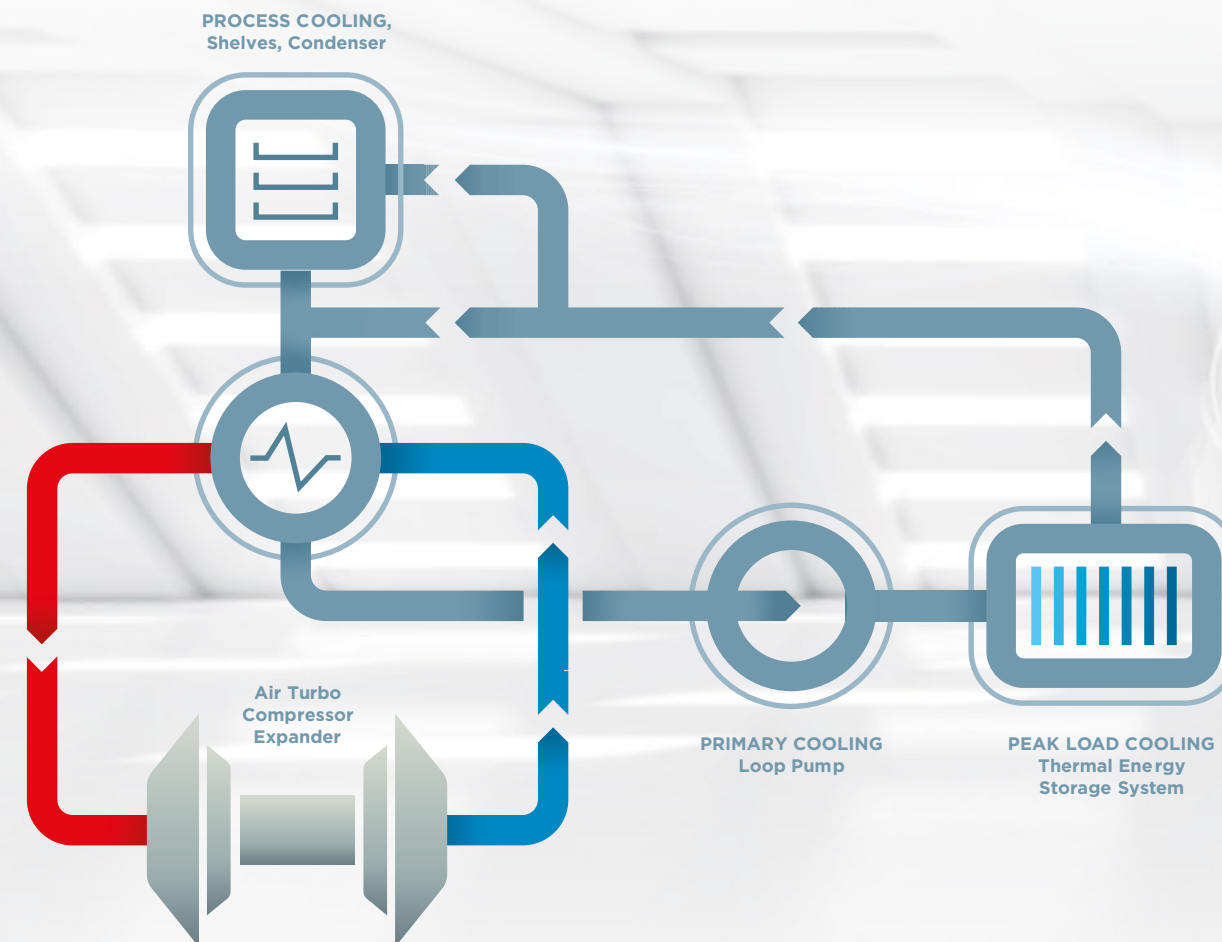
KryoAir cools air down to -100°C which circulates at ultra-low temperatures inside the freeze dryer as a refrigerant. The key benefits of this new technology are:

- 1 **AIR AS A REFRIGERANT HAS AN EXTREMELY LOW ENVIRONMENTAL IMPACT.**
- 2 **GREATER EFFICIENCY AT LOW TEMPERATURES THAN CONVENTIONAL SYSTEMS.**
- 3 **RELIABLE SYSTEM BASED ON A SIMPLE CONCEPT ENSURING OUTSTANDING SAFETY.**
- 4 **COMPACT FOOTPRINT WITH EXCELLENT COLD THERMAL ENERGY STORAGE CAPACITY.**



 **KryoAir** with its 100% green refrigeration technology is easily applied to **IMA Lyomax** and **Lyofast** freeze dryers.

THE BEAUTY OF KRYOAIR IS IN THE SIMPLICITY OF ITS CONCEPT



ALWAYS READY TO COOL

KryoAir takes what is simple and turns it into a new technology which is highly reliable. The innovative energy storage system has no moving parts and optimises the alternating cycle phases to generate cold thermal energy.

SPACE-EFFICIENT INTEGRATION

Thanks to its essential concept and the awareness of the development team behind KryoAir, the overall footprint, including the Cold Thermal Energy Storage system, is particularly small. This facilitates factory layout issues enabling easy integration with freeze-drying equipment.



 **KryoAir** features a compact energy storage system that stores and **releases cold energy at key times** during the cycle.