



# WHAT IS TwinGuard<sup>eco</sup> TECHNOLOGY?

The TwinGuard<sup>®</sup> ECO dual cooling system offers our highest level of sample protection through the use of two independent refrigeration circuits, each capable of maintaining ultra-low temperatures.



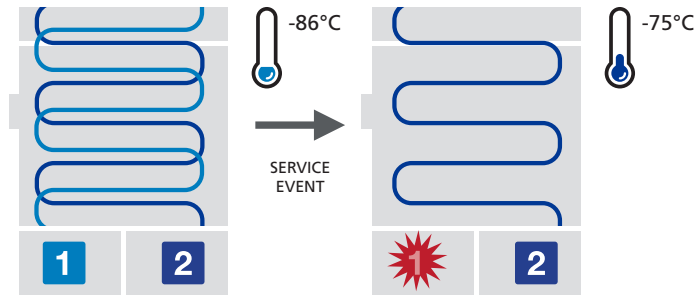
MDF-DU703VXHA-PA

MDF-DU503VXHA-PA

MDF-DU303VXH-PA

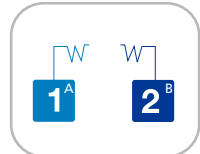
## PHCbi Freezer (TwinGuard<sup>®</sup> ECO System)

If a service event occurs in one system, the second system maintains an ultra-low temperature of 75°C.



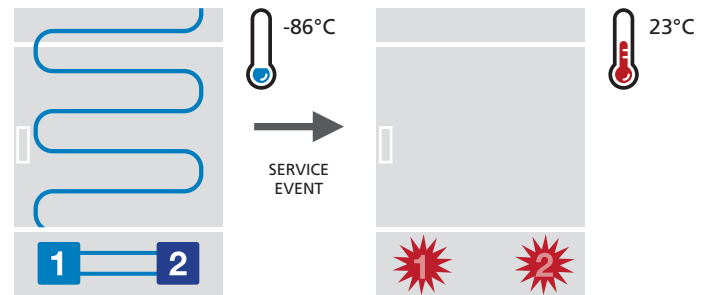
## PHCbi Auto-Cascade System

With PHCbi's patented TwinGuard<sup>®</sup> ECO technology, two compressors are completely separated from one another, independent auto cascade refrigeration systems, leaving no reliance on the other to operate. So if one of them needs servicing, the other is unaffected and your freezer will keep performing at ultra-low temperatures.



## Traditional Freezer (Cascade System)

Freezer relies on a binary cascade system, causing a complete shut-down when a service event occurs. Temperature quickly rises to room temperature.



## Traditional Cascade System

Binary cascade refrigeration systems found in many ultra-low freezers are traditionally made up of two parts: a high stage and low stage. These parts rely on one another to operate, so if there is a problem with either part, the entire system shuts down.



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