

The world's only refrigeration system to achieve optimal operation through engineering of the freezing process

**Rapid ultra-low-temperature freezing that does not destroy cells**

**A 70-kg tuna loin can be frozen to a core temperature of  $-50^{\circ}\text{C}$  in only 12 hours.**

- Frost control technology** ●●● **Continuous ultra-low-temperature air-blasting operation**
- Optimal condensing pressure** ●●● **High efficiency / energy saving**
- CE marking certification** ●●● **Complete compliance with European standards**

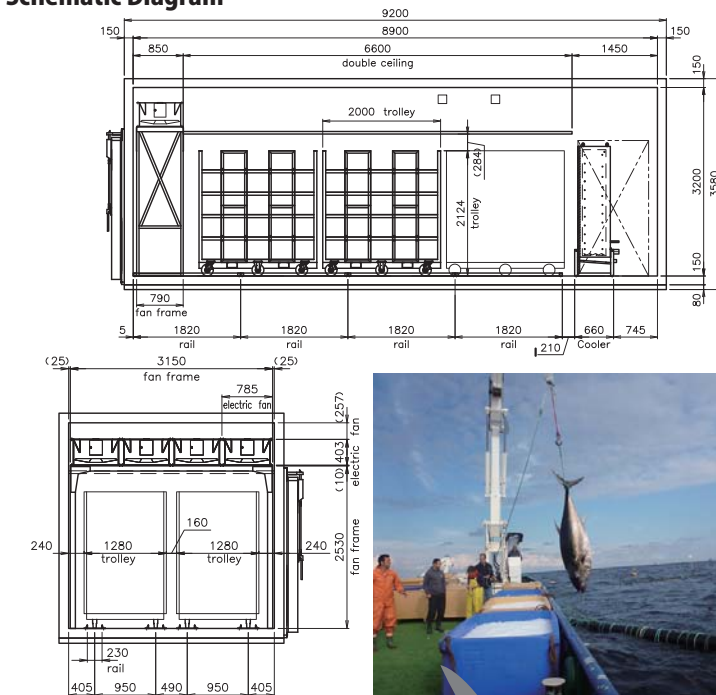
- An air-blasting type rapid freezer has the inherent problem of performance decline due to frost build-up on its heat exchanger. The  $\eta$  max Refrigeration System solves this by achieving a very small difference between the refrigerant temperature and ambient temperature, which allows reliable and efficient production of high-quality frozen products.
- This small temperature difference also enables continuous operation at an ultra-low-temperature range, which was considered impossible for a freezer with a two-stage compressor. Rapid uniform freezing that maintains high product quality is now a reality.
- Optimal control of condensing pressure cuts power consumption during cold weather while increasing freezing power as liquid temperature drops. Such synergy brings energy savings and operational efficiency far superior to those of a cascade refrigeration system.
- The simple configuration leads to greater reliability with a far lower risk of failure. Periodic maintenance ensures that the system is kept in good condition to provide operation as planned.

●●● **Specifications**

Power: 200V-400V, adapted to local power rating 3 $\Phi$ 50/60Hz  
 Exterior: Stainless steel (150t insulation)  
 Interior: Stainless steel  
 Operation temperature range:  $-30^{\circ}\text{C}$  to  $-60^{\circ}\text{C}$   
 Lowest temp. in freezer:  $-70^{\circ}\text{C}$   
 Condensing unit: Air or water cooling/two-stage compressor screw 55 kW  
 Refrigerant: R-404A  
 Freezing Capacity: 4t/12h (Standard 70 kg loin)



●●● **Schematic Diagram**



Achieving  
 **$\eta$  max =  $\phi$   $\Delta$  Smin<sup>®</sup>**  
 in Refrigeration

**Freeze their needs** [www.refrigeration.jp](http://www.refrigeration.jp)

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