

Total Lab Solutions



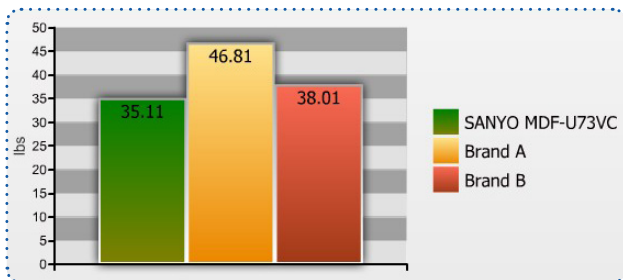
TECHNICAL BULLETIN

GREEN Ultra Low Freezer Case Study

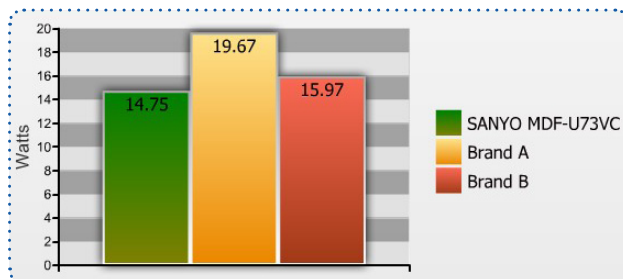
Ultra Low Freezer Case Study

In June 2008, a green justification study was conducted for a major research university that instituted key sustainable directives in their procurement process. This study examined several key areas that focus on energy efficiency and sustainable design including: annual CO₂ emissions, life cycle operational and facility HVAC costs. The study showed operational and energy savings for SANYO ultra low freezers when compared to other brands. The following graphs show the energy savings, which is then translated into cost savings and CO₂ savings per year.

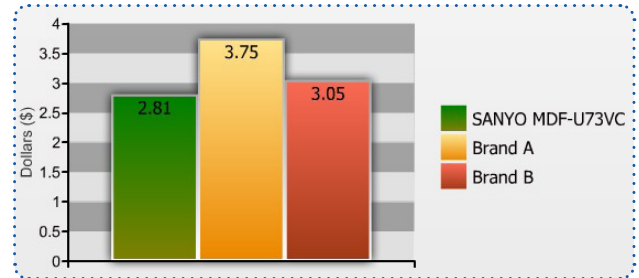
Annual CO₂ Emissions by Box Capacity*



Additional Energy Consumption for cooling by the HVAC system by Box Capacity*



Total Cost for Operation and Cooling per Box Capacity*



*Based on internal performance data. Tested in 25°C ambient environment. Freezer cycling at -80°C. Cabinet volume, 25 cu. ft. Average cabinet temperature based on temperature mapping (15 thermocouples).

GREEN Lab Focus

Laboratory facilities present a unique challenge for energy efficient and sustainable design, with their inherent complexity of systems, health and safety requirements, long-term flexibility and adaptability needs, energy use intensity, and environmental impact. The typical laboratory is about five times as energy intensive as a typical office building and costs about three times as much per unit area. Any effort to reduce energy use and environmental impact are heavily influenced by special functional and health and safety requirements, which need to be considered in rating and benchmarking the overall environmental performance of a laboratory.

SANYO GREEN ultra-low freezers:

- Minimize carbon footprint with less impact on the environment.
- Maximize lab space with smaller footprint for ultra high density storage.
- Reduce operational costs through high storage volume efficiency.
- Allow for minimized HVAC loads and air handling requirements in facilities.
- Emit less heat into the laboratory environment, minimizing air conditioning costs.