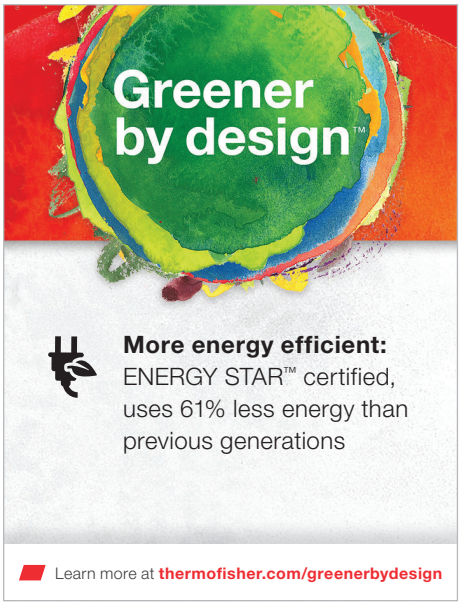
TSX Series high-performance undercounter refrigerators



Introduction

We are committed to designing products with the environment in mind. This fact sheet provides the rationale behind the environmental claim that Thermo Scientific™ TSX Series high-performance undercounter refrigerators are 61% more energy efficient than previous generation models using conventional refrigerant.

Product description

The TSX Series undercounter refrigerators are powered by our unique V-drive and synchronized temperature management (STeM) technologies—designed to provide temperature stability that adapts to your environment—to help protect samples and offer energy savings. The TSX Series refrigerators combine coldwall technology and forced-air cooling that dynamically adjusts to keep temperatures stable during periods of door opening. The TSX Series refrigerators utilize two thermoelectric heat pumps that are synchronized to modulate their activity to keep pace with customer usage—powering the system only when necessary—which helps drive energy savings. The combination of cold-wall and forced-air mechanisms helps ensure that conditions are optimal for the most demanding applications, such as vaccine or pharmaceutical storage.

In addition to these energy-saving features, the TSX Series undercounter refrigerators use non-hydrofluorocarbon (non-HFC) coolants, which help to reduce environmental impact and further increase cooling efficiency. HFC coolants have been identified by the United States Environmental Protection Agency (US EPA) [1] and European Commission [2] as having significant global warming potential (GWP).

Thermo Fisher has phased out use of these refrigerants in our freezers and refrigerators in favor of using more environmentally friendly hydrocarbon alternatives. Our commitment to environmental responsibility doesn't end there. The TSX Series refrigerators also offer 42% more storage capacity than the previous model (Cat. No. REL404A) in a similar footprint. This promotes the efficient use of laboratory space and cold storage. Finally, the quiet operation of the TSX Series refrigerators (35 dB; the previous model operates at 60 dB) allows them to be located conveniently inside the lab.

TSX Series high-performance undercounter refrigerator

Green feature

More energy efficient

TSX Series high-performance undercounter refrigerators have ENERGY STAR certification, meeting the certification criteria for laboratory-grade refrigerators and freezers. The ENERGY STAR label is the US government–backed symbol for energy efficient choices. The program aims to provide simple, credible, unbiased information to help consumers and businesses make well-informed purchasing decisions. The US EPA ensures each qualified product is independently certified to deliver expected quality, performance, and savings.

In addition to having ENERGY STAR certification, TSX Series models are more energy efficient than previous models. For example, the TSX Series TSX505SA model uses 61% less energy compared to the Thermo Scientific™ Revco™ REL404A model (Table 1). Power usage (kW) for each model was measured using a temperature set point of +4°C while operating at +20°C ambient environment temperature without door openings [3]. Power consumption was measured for a 24-hour span to determine daily energy usage (kWh/day). The energy use reduction percentage shows the energy efficiency gain when switching to the specified TSX Series model from the comparative model shown. Choosing the TSX Series TSX505SA model would help save more than 900 kWh of energy over the course of a year. This represents 0.70 tons of CO_2 equivalents, or the greenhouse gas emissions from driving 1,556 miles in an average passenger car [4]. It also translates to energy savings of just over $90/year [5]. In addition to these energy savings benefits, the TSX Series refrigerators emit less heat into the room, which may also help lower heating, ventilation, and air conditioning (HVAC) costs. The TSX Series TSX505SA model emits 206.2 BTU [6], compared to 616 BTU from the Revco REL404A model. Designing the TSX Series high-performance undercounter refrigerators to be more energy efficient and with the environment in mind is a win for our company, our customers, and the planet.

Table 1. Comparison of energy use between different refrigerator models.

Refrigerator model	Power usage (kW)	Run time (hr)	Energy usage (kWh/day)	Energy use reduction (%)
TSX505SA	0.11	24	1.68	61
REL404A	0.18	24	4.30	-

References

1. US EPA Significant New Alternatives Policy (SNAP) Program, epa.gov/snap
2. European Comission policy on fluorinated greenhouse gases, ec.europa.eu/clima/policies/f-gas_en
3. The ENERGY STAR test is conducted at 24°C ambient, with a set point of 5°C, a defrost cycle, and 24 door openings. Data under these test conditions were not available for the REL404A so we chose to compare them at the same conditions (20°C ambient temperatures without door openings). Under the ENERGY STAR test conditions, the TSX505SA consumes 2.65 kWh/day.
4. US EPA Greenhouse gas equivalencies calculator, epa.gov/cleanenergy/energyresources/ calculator.html, accessed on July 17, 2019.
5. Calculated from the United States Energy Information Administration energy rates in the commercial sector available at eia.gov/electricity/monthly/epm_table_grapher.cfm?t=epmt_5_6_a, accessed on July 17, 2019.
6. TSX Series High-Performance Undercounter Lab Refrigerators product page, thermofisher.com/order/catalog/product/TSX505GA

Find out more at **thermofisher.com/tsx**

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