

# SmartNotes

# QA

## Is there an ENERGY STAR® standard that I can reference when choosing laboratory-grade refrigerators, freezers, and ultra-low temperature freezers?

As of August 2016, the Environmental Protection Agency (EPA) has NOT released ENERGY STAR standards for laboratory-grade refrigerators, freezers, or ultra-low temperature freezers. Therefore, until such standards are released, it is not possible for any manufacturer to claim that they meet ENERGY STAR standards. The EPA has officially released a test method; however, testing to that method does not mean that the refrigerator or freezer can be promoted as meeting the ENERGY STAR standard. The EPA's energy test method includes:

- a. Standardized procedures and equipment to be used when measuring energy consumption for laboratory-grade refrigerators, freezers, and ultra-low temperature freezers
- b. A specific list of attributes and data that must be reported in whole when claiming adherence to the EPA test method
- c. A specific list of requirements that must be met regarding the test condition and equipment used to conduct the test



While energy consumption is an important factor in choosing laboratory grade refrigerators, freezers, and ultra-low temperature freezers, trading off other performance characteristics should not be an option.

## Leading sample protection, energy savings and sustainability

Thermo Scientific™ TSX Series ultra-low temperature freezers are designed to provide sample protection, energy savings and environmentally-friendly features and benefits.

### The drive for sample integrity and energy savings

The performance and energy savings of the new TSX are driven by our unique V-drive technology.

- The V-drive runs at variable speeds, adjusting cooling performance to the conditions inside and outside of the freezer
- When conditions are stable, the drive runs at a low speed, reducing energy consumption
- When there are frequent door openings, or samples are added to the freezer, the control system detects the activity and increases the drive speed to bring temperatures back to the setpoint quickly

### Save more energy at a $-70^{\circ}\text{C}$ setpoint

By switching from a  $-80^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  setpoint, you can save an additional 10–18% in energy\*:

- TSX600 at  $-80^{\circ}\text{C}$  = 8.7 kWh/day; at  $-70^{\circ}\text{C}$  = 7.8 kWh/day.  
**An additional savings of 10%**
- TSX400 at  $-80^{\circ}\text{C}$  = 7.9 kWh/day; at  $-70^{\circ}\text{C}$  = 6.5 kWh/day.  
**An additional savings of 18%**

### Environmentally-friendly design features

- Natural refrigerants for lower environmental impact and higher cooling efficiency
- Water-blown foam insulation eliminates the refrigerant out-gassing, common in other foam products
- Manufactured in an award-winning\*\*, zero waste to landfill facility (93% recycling, 7% waste to energy)



\* Internal performance testing using  $-80^{\circ}\text{C}$  and  $-70^{\circ}\text{C}$  setpoints on TSX400D and TSX600D models  
\*\* Industry Week 2013 Best Plant Award. <http://www.industryweek.com/quality/2013-iw-best-plants-winner-thermo-fisher-scientific-growing-quality-culture-lab>

Conclusion: TSX Series ultra-low freezers are designed to offer significant energy savings for sustainable-minded labs.

Find out more at [thermofisher.com/tsx](http://thermofisher.com/tsx)

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