



Energy-efficient lab equipment

# Designed from the bottom up

For energy efficiency

# Biological safety cabinets

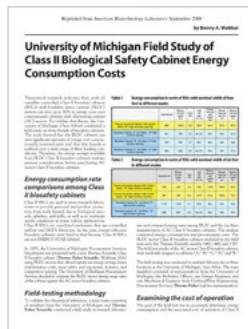


Up to  
**68%**  
less energy

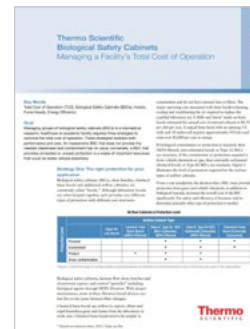
Less energy consumption compared to cabinets with AC motors – save up to 2,405 kWh technologies. Additional reduction in energy consumption when using standby mode of Herasafe 2030i BSC.<sup>1</sup>

With proprietary airflow design and energy-efficient DC motors, Thermo Scientific™ Biological Safety Cabinets (BSCs) are designed to reduce energy consumption. They use up to 68% less energy than cabinets with traditional AC motors<sup>1</sup>. This is primarily due to the increased efficiency of DC motors in converting electric energy to airflow without the braking required in AC motors.

These biosafety cabinets also feature a standby mode when not in use. This automatically reduces blower speed and protects samples until you are ready to resume work. Additionally, it further reduces energy usage from 0.18 kWh to 0.070 kWh for the MSC-Advantage models or 0.055 kWh for the Herasafe 2030i models, supporting an annual reduction of up to 2,405 kWh of energy consumption.<sup>1</sup>



University of Michigan field study published in American Biotechnology Laboratory by Bonny A. Webber on actual measured energy consumption of their on-site Class II BSCs.



This paper includes tips and tricks how to reduce the use of exhaust systems and how to select cabinets with cost-saving features.



0.20  
kWh

## MSC-Advantage Biological Safety Cabinet

The Thermo Scientific™ MSC-Advantage™ Class II Biological Safety Cabinet provides efficiency, safety and value for routine applications.



Download the Green Fact Sheet for more information



Learn more at [thermofisher.com/msc-advantage](https://thermofisher.com/msc-advantage)

## Herasafe 2030i and Herasafe 2025 Biological Safety Cabinets

The Thermo Scientific™ Herasafe™ 2030i and 2025 Class II Biological Safety Cabinets are designed to deliver performance with exceptional precision for demanding cell culture and sensitive applications, especially for bio pharma and advanced research initiatives.



Download the Green Fact Sheet for more information



Learn more at [thermofisher.com/herasafe2030i](https://thermofisher.com/herasafe2030i)



Learn more at [thermofisher.com/herasafe2025](https://thermofisher.com/herasafe2025)



0.055  
kWh

1. Compare data highlighted in the Green Fact Sheet from 2021 under <https://assets.thermofisher.com/TFS-Assets/LPD/Product-Information/PG1635-PJT1818-COL21454-Biosafety-Cabinets-Green-Fact-Sheet-Americas-FHR.pdf>

# Ultra-low temperature freezers



Our Thermo Scientific™ TSX™ Ultra-Low Temperature Freezers (ULTs) offer outstanding sustainability and sample protection. Efficient components, water-blown insulation, and clean hydrocarbon refrigerants are what set our ULT freezers among the leaders in the market today.

Conventional-refrigerant ultra-low freezers can run up to 30 kWh/day in energy usage depending on age and size. Thermo Scientific ultra-low temperature freezers help save up to 70% energy compared to previous generation of ULTs – that is up to 7,738 kWh less energy consumed during the year for one unit! If yours is a facility that uses several ULTs, that is an enormous amount of energy and associated cost saved.<sup>1</sup>

Our TSX ULTs, which are ENERGY STAR compliant, use a variable speed compressor which continually adapts to usage patterns and reduces energy.

Our Thermo Scientific™ TDE Ultra-Low Temperature Freezers are energy efficient and use up to 10% less energy than prior models that are new and up to 42% less energy than prior models that are in use and aging.<sup>2</sup>

Additionally, switching the setpoint from -80°C to -70°C can reduce energy consumption by up to 39%, with annual savings of up to 1533 kWh.<sup>2</sup>

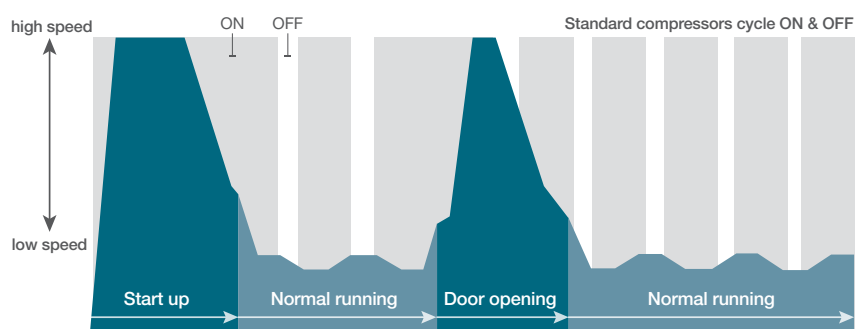
Save up to **70%**

Older model ULTs can use up as much energy as an entire house! Upgrade your ageing ULT to a Thermo Scientific ULT and save up to 70% energy<sup>1</sup>

Up to **39%** savings

Consider lowering your TSX ULT's setpoint to -70°C and save up to 1,533 kWh annually per freezer<sup>2</sup>

## How V-drive technology works



Green Fact Sheet: TSX Series Ultra-Low Temperature Freezers



Green Fact Sheet: TDE Series Ultra-Low Temperature Freezers



Learn more at [thermofisher.com/ult](https://thermofisher.com/ult)

1. Compare data highlighted in the Green Fact Sheet from 2019 under <https://www.thermofisher.com/content/dam/LifeTech/Documents/PDFs/PG1635-PJT1818-COL21359-2016-Green-Fact-Sheets-TSX-Americas-FHR.pdf>

2. Compare data highlighted in the Green Fact Sheet from 2019 under <https://assets.thermofisher.com/TFS-Assets/BID/Datasheets/gfs-tde-ultra-low-temperature-freezers.pdf>

# Refrigerators and freezers



Our TSX high-performance refrigerators and freezers are powered by our unique V-drive technology – designed to provide temperature stability and uniformity by continually adapting to your environment. While conventional units use single-speed compressors that continually cycle on and off, the TSX Series refrigerators save energy by utilizing a variable speed control system with hydrocarbon refrigerants. When conditions are stable, such as when the unit is running overnight or at weekends, the drive runs at a low speed, reducing energy consumption while maintaining a stable temperature.

This technology reduces energy consumption by up to 50% for refrigerators and 25% for freezers, compared to previous generations.<sup>1</sup> With regards to the freezer this would save up to 2,245 kWh of energy over the course of a year.

The TSX Series is ENERGY STAR marked, meeting established ENERGY STAR certification criteria for lab-grade refrigerators and freezers.

To save additional energy you have the option of turning down the perimeter heater by doing this you can reduce your energy usage by up to 32% dependent on the model.

Up to  
**32%**  
energy  
reduction

Turning down your perimeter heater setting can reduce your energy usage

Save  
up to  
**2,245**  
kWh

Upgrading your freezer from a previous generation can save up to 25% in energy usage over the course of a year



**Contact your local Thermo Scientific representative to discuss the savings that you could make by upgrading your refrigerator or freezer today.**



**Green Fact Sheet: TSX Series High-Performance Freezers**



**Green Fact Sheet: TSX Series High-Performance Undercounter Refrigerators**



**Green Fact Sheet: TSX Series High-Performance Refrigerators**



**Learn more at [thermofisher.com/labfreezers](https://thermofisher.com/labfreezers)**

1. Compare data highlighted in the following Green Fact Sheets: For freezers under <https://assets.thermofisher.com/TFS-Assets/LED/Datasheets/PG1789-PJT2741-COL22708-Green-Fact-TSX-Series-Freezer-Global-FHR.pdf> (2018); For undercounter refrigerators under <http://assets.thermofisher.com/TFS-Assets/BID/Reference-Materials/tsx-undercounter-refrigerators-green-fact-sheet.pdf> (2019); For high-performance refrigerators under <https://assets.thermofisher.com/TFS-Assets/LED/Datasheets/PG1789-PJT2741-COL22692-2017-Green-Campaign-GFS-TSX-Series-Refrigerators-Americas-FHR.pdf> (2018)

# Refrigerated incubators



Thermo Scientific™ Heratherm™ Refrigerated Incubators use 70-84% less energy to operate (at 20°C and 37°C) than refrigerated incubators using traditional compressor technology, whether being used for heating or cooling applications.

Choosing a Heratherm incubator could see annual savings of over 2,800 kWh of energy. The Peltier module of the Heratherm reduces heat output by up to 90%, which can provide additional savings in HVAC energy consumption.



**Smart Note on Peltier technology:**  
*'Why are Peltier incubators with cooling and heating technology the ideal incubator for labs aiming to be environmentally focused compared to conventional compressor units?'*

Up to  
**84%**  
less energy

Less energy than traditional compressor units<sup>1</sup>



Download the Green Fact Sheet to learn more



For product information visit [thermofisher.com/refrigeratedincubators](https://www.thermofisher.com/refrigeratedincubators)

1. Compare data highlighted in the Green Fact Sheet from 2017 under <https://www.thermofisher.com/content/dam/LifeTech/Documents/PDFs/PG1635-PJT1818-COL21644-Green-Fact-Sheet-Heratherm-Americas-FLR.pdf>

# Centrifuges

Thermo Scientific centrifuges are designed to support energy efficiency through several key features:<sup>1</sup>



**Green Mode.** The Thermo Scientific™ Sorvall™ LYNX™ Superspeed Centrifuge features a green mode which will put the centrifuge on standby if not used for 2 hours, reducing energy consumption by up to 64%, compared to previous generations.



**Smart Vacuum** removes up to 80% of the air inside the LYNX 6000 chamber, to minimize air friction on the spinning rotor, reducing power consumption by up to 74%.



**Windshielded rotors** used in the Thermo Scientific™ Sorvall™ BIOS Centrifuges and Thermo Scientific™ Cryofuge™ Centrifuges reduce energy consumption by up to 64%.



**Thermo Scientific™ Fiberlite™ Rotors** are made from 100% lightweight carbon fiber, meaning that they weigh up to 60% less than metal equivalent rotors and therefore accelerate/decelerate faster translating into reduced energy consumption per run.



Download the Green Fact Sheet for more information



For product information visit [thermofisher.com/centrifuges](https://thermofisher.com/centrifuges)



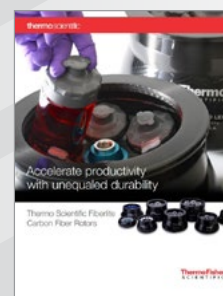
## Fiberlite rotors

A lightweight carbon fiber construction allows for a unique rotor design not possible with metal, while corrosion and fatigue-resistance secures the rotor's structural integrity.

**Backed by a 15-year warranty.**




For product information visit [thermofisher.com/fiberlite](https://thermofisher.com/fiberlite)



Fiberlite Brochure

1. Compare data highlighted in the Green Fact Sheet from 2021 under <https://www.thermofisher.com/content/dam/LifeTech/Documents/PDFs/PG2030-PJT4622-COL33722-Centrifuges-FactSheet-Americas-FHR.pdf>

A photograph of several high-voltage electrical transmission towers and power lines stretching across a landscape. The sky is a clear, light blue, and the ground is a mix of green and brown. The image is partially obscured by a white diagonal shape that separates it from the rest of the page.

Contact your local Thermo Scientific representative  
to discuss the savings that you could make by  
upgrading your lab equipment today.

Learn more at [thermofisher.com/labequipment](https://thermofisher.com/labequipment)

thermo scientific