TSX Series high-performance undercounter refrigerators

The only undercounter lab-grade refrigerator with redundant cooling

- Low energy usage
- Low noise
- High storage capacity
- Universal voltage

Thermo Fisher Scientific
Introducing the Thermo Scientific™ TSX505

Powered by V-Drive featuring STeM Technology

- Redundant cooling technology protects your storage while delivering 37% less energy, 20X less noise and twice the storage capacity*
- Variable speed control using thermoelectric devices in place of compressors, provides ideal conditions for the most demanding applications
- Universal voltage (100-240v, 50/60hz) allows placement throughout the facility and globally just by connecting the region specific power cord.

Designed for the following industries

- Biological
- Diagnostic kits & reagents
- Molecular biology
- Vaccines & pharmacies
- Clinical applications
- Industrial testing

Air and glycol temperature display

Electronic lock

Bright, easy-to-adjust interior LED lighting

ADA compliant, ergonomic handle with reversible doors fits any workspace configuration

Choice of transparent glass or solid door

Datalogging with USB download functionality

Audible & visual alarms (power fail, high temp, low temp, low battery, memory full, door ajar)

Convenient, adjustable shelves (rolling wire baskets available as customer installed accessory)

1" rear access port

*Internal data based on comparisons to Thermo Scientific model
How the TSX505 works

Compressor-free V-drive featuring STeM (synchronized temperature management)

- Dual refrigeration system combines the benefits of cold wall and fan-assisted recovery
- Actively monitors the cabinet to maintain the desired temperature conditions
- Constant monitoring and adjustment during periods of door openings keeps temperatures stable without temperature fluctuation found in models with compressors that cycle on/off
- This tight internal air circulation eliminates the risk of freezing which can ruin materials like vaccines

The TSX505’s refrigerant loop absorbs and transfers heat energy from the outside into a heat pump in the back of the refrigerator. There, heat rejection coils transfer heat energy from the heat pump back into the ambient environment.

System Comparison Chart

In the chart, the gray line represents the additive effect of using cold wall (blue line) and forced air (orange line), with the benefit that if one of those systems should experience an issue, you know the other system can keep the unit going until service arrives.
Designed to save energy, reduce noise and meet sustainability protocols

As shown, the TSX505 uses up to 37% less energy with an annual cost reduction of 39%*

<table>
<thead>
<tr>
<th>Energy Usage</th>
<th>Refrigerator Model</th>
<th>Annual Power Usage (kW)</th>
<th>Annual Run Time (hours)</th>
<th>Annual Energy Usage (kWh)</th>
<th>Additional Energy Used</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSX505</td>
<td>0.11</td>
<td>24</td>
<td>2.7</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>REL404</td>
<td>0.18</td>
<td>24</td>
<td>4.30</td>
<td>37.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Cost to Run</th>
<th>Refrigerator Mode</th>
<th>Cycle/Day</th>
<th>Usage Hours/Day</th>
<th>Usage Hours/Year</th>
<th>Energy Cost ($/kWh)**</th>
<th>Annual Cost</th>
<th>Additional Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSX505</td>
<td>1</td>
<td>24</td>
<td>8,760</td>
<td>$0.1019</td>
<td>$98.19</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>REL404</td>
<td>1</td>
<td>24</td>
<td>8,760</td>
<td>$0.1019</td>
<td>$160.68</td>
<td>30%</td>
</tr>
</tbody>
</table>

The sound of quiet
Whisper-quiet operation is the unseen feature of the TSX505. As shown, the 35 dBA sound output is less than an average library, enabling the refrigerator to reside comfortably in work station areas.

The SNAP/F-Gas compliant choice
The TSX505 is designed to meet the standards established by the U.S. Environmental Protection Agency’s Significant New Alternatives Policy (SNAP) program and the European Union’s F-Gas Regulation (517/2014). SNAP evaluates refrigerants that are potentially harmful to the environment. The TSX505 has been designed with refrigerants that are in compliance with SNAP.

Decibel scale of common sounds

<table>
<thead>
<tr>
<th>Noise source</th>
<th>Decibel level (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freeway traffic, vacuum cleaner</td>
<td>70</td>
</tr>
<tr>
<td>Conversation in restaurant, office, background music</td>
<td>60</td>
</tr>
<tr>
<td>Library</td>
<td>40</td>
</tr>
<tr>
<td><strong>TSX Series undercounter refrigerator</strong></td>
<td>35†</td>
</tr>
<tr>
<td>Quiet rural area</td>
<td>30</td>
</tr>
<tr>
<td>Rustling leaves</td>
<td>20</td>
</tr>
<tr>
<td>Breathing</td>
<td>10</td>
</tr>
</tbody>
</table>

*Internal data based on comparisons to Thermo Scientific model REL404A.
**https://www.eia.gov/electricity/monthly/epmt_table_grapher.cfm?t=epmt_5_6_a. Use data from the most current month reported and use the energy rate for the "US Total" in the "Commercial" sector.
† Steady state 35 dBA; start-up 42 dBA.
Designed to hold more within a smaller footprint

As shown in these two side views, the TSX505 does not include internal protrusions such as overhead fans. This allows you to store more inside its interior. Also, with the V-drive and STeM cooling, temperatures are consistent at all shelf levels, making the TSX505 a smart choice for vaccines, reagents, media and other sensitive material.

TSX Series undercounter

- 45 boxes per level (9x5 pattern)
- 225 boxes per shelf (5 levels per shelf, 2 shelves per unit)
- +45 boxes (1 additional level above top shelf)

Total number of vaccine boxes: 495 boxes (225 + 225 + 45)**

Alternative model*

- 36 boxes per level (9x4 pattern)
- 108 boxes per shelf (3 levels per shelf, 2 shelves per unit)

Total number of vaccine boxes: 216 boxes (108 + 108)

*Thermo Scientific Revco, model REL404
**MMR vaccine box: 3.5”W x 1.75”H x 1.625”D

Easy to operate user interface

- Password protected
- Icon based
- Adjustable lighting
- Built-in datalogging
- USB port
- Ergonomic tilted design to help prevent neck strain
- Electronic lock is standard
### Specifications and ordering information

#### TSX Series high-performance undercounter refrigerator

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Doors</th>
<th>Settable Range</th>
<th>Energy Consumption</th>
<th>Capacity cu. ft. (liters)</th>
<th>Electrical</th>
<th>Plug Type</th>
<th>Shelves</th>
<th>Defrost</th>
<th>Sound Level</th>
<th>Certifications</th>
<th>Interior Dimensions: (D x W x H)</th>
<th>Exterior Dimensions: (D x W x H)</th>
<th>Shipping Weight lbs. (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSX505SA</td>
<td>1, Solid</td>
<td>+3°C to +7°C</td>
<td>1.7 kWh/day</td>
<td>156 Liters / 5.5 Cubic Feet</td>
<td>NEMA 5-15</td>
<td>Auto</td>
<td>35 dBA</td>
<td>100</td>
<td>3</td>
<td>Ul, CE, REACH, RoHS</td>
<td>1.5 x 19.5 x 23 in. (520 x 495 x 584 mm)</td>
<td>26 x 23.6 x 31.8 in. (660.4 x 599.4 x 807.7 mm)</td>
<td>155 (71)</td>
</tr>
<tr>
<td>TSX505GA</td>
<td>1, Glass</td>
<td>2.4 kWh/day</td>
<td></td>
<td>147 Liters / 4.2 Cubic Feet</td>
<td>NEMA 5-15</td>
<td>Auto</td>
<td>35 dBA</td>
<td>100</td>
<td>3</td>
<td>Ul, CE, REACH, RoHS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*For alternate power cords, review accessory list below.

#### Customer installed accessories

<table>
<thead>
<tr>
<th>For use with refrigerator size</th>
<th>5.5 cu. ft. (156L)</th>
<th>Description</th>
<th>Cat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rolling Wire Basket</td>
<td></td>
<td>WB05</td>
<td></td>
</tr>
<tr>
<td>Additional wire shelf</td>
<td></td>
<td>WS05</td>
<td></td>
</tr>
<tr>
<td>Set of casters with mounting hardware</td>
<td></td>
<td>CS05</td>
<td></td>
</tr>
<tr>
<td>Power Cord 115V</td>
<td></td>
<td>100056H01</td>
<td></td>
</tr>
<tr>
<td>Power Cord, D NEMA 6-15P 230V</td>
<td></td>
<td>100091H01</td>
<td></td>
</tr>
<tr>
<td>Power Cord, V EU Schuko 230V</td>
<td></td>
<td>100089H01</td>
<td></td>
</tr>
<tr>
<td>Power Cord, C China 220V/50Hz</td>
<td></td>
<td>100092H01</td>
<td></td>
</tr>
<tr>
<td>Power Cord, W UK Type G-10A 23</td>
<td></td>
<td>100090H01</td>
<td></td>
</tr>
</tbody>
</table>

Visit [thermofisher.com](http://thermofisher.com) for accessories, wireless monitoring, consumables, media, reagents and more.