

thermo scientific



Thermo Scientific TDE Series
Ultra-Low Temperature Freezers

Thermo Scientific™ TDE Series Ultra-Low Temperature Freezers

- **H-drive hydrocarbon refrigeration system** provides sustainable performance with reliability you can count on
- **Low peak variation** helps ensure sample temperature protection throughout entire cabinet
- **Fast door opening recovery** in as little as 14 minutes
- **Long warm-up time** from -80°C to -50°C in up to 5 hours
- **Four capacities:** 300, 400, 500 and 600 2-inch boxes
- **Decrease storage footprint** up to 25%
- **5-year** standard warranty



Designed to keep your samples safe

- Worry-free storage; with low peak variation, samples are protected throughout the entire cabinet.¹
- Secure freezer settings with sample security
- Backed by our Global Service and Support Team

Limit environmental impact and lower HVAC costs

- Uses as low as 11.2 kWh/day, depending on size
- Less heat emission lowers HVAC costs
- Natural refrigerants compliant with EU F-Gas regulation: R170 and R290
- Environmentally-friendly, water-blown foam insulation
- Manufactured in an award-winning, zero-waste-to-landfill facility

User-friendly and quiet

- New HIC touch screen user interface
- Quiet enough to reside directly in the laboratory; at just 50 dBA, the sound is comparable to a home refrigerator.²

1. Typical freezer data based on internal testing with freezer setpoint at -80°C and ambient temperature at 20°C. Performance data varies across freezer size and electrical specifications.

2. All data based on internal data unless otherwise noted. Data on file.

Dependable storage with operational savings and sustainability

User-friendly HIC interface and cabinet

- Easy to use: plug in and go; no setup required
- H-drive Information Center (HIC) combines easy-to-read temperature with simple capacitive touch buttons
- Advanced security features: alarm settings, setpoint security passcode, and padlock-compatible doors
- Ergonomic design: single-hand door operation, eye-level display, and shelf-level placement that do not require floor-level loading of racks
- Four inner doors minimize ambient temperature during sample retrieval



Specifications & Ordering Information



Upright Freezers (-50°C to -86°C)

| General Purpose Model | Capacity | | Electrical | Amps / Breaker (Plug type) | Max Shelf Weight kg | Interior Dimensions H x W x D cm | Exterior Dimensions H x W* x D cm | Shipping Weight kg |
|-----------------------|----------|----------------|---------------|----------------------------|---------------------|----------------------------------|-----------------------------------|--------------------|
| | Liters | Cryoboxes 5 cm | | | | | | |
| TDE30086FD | 422 | 300 | 208-230V/60Hz | 5.6/15 (NEMA 6-15) | 57 | 130.1 x 45.2 x 71.9 | 198.1 x 58.4 x 97.7 | 323 |
| TDE30086FV | | | 230V/50Hz | 5.9/10 (European) | | | | |
| TDE40086FD | 549 | 400 | 208-230V/60Hz | 5.9/15 (NEMA 6-15) | 75 | 130.1 x 58.8 x 71.9 | 198.1 x 71.9 x 97.7 | 312 |
| TDE40086FV | | | 230V/50Hz | 5.3/10 (European) | | | | |
| TDE50086FD | 682 | 500 | 208-230V/60Hz | 5.0/15 (NEMA 6-15) | 93 | 130.1 x 73.0 x 71.9 | 198.1 x 86.4 x 97.7** | 333 |
| TDE50086FV | | | 230V/50Hz | 5.9/10 (European) | | | | |
| TDE60086FD | 816 | 600 | 208-230V/60Hz | 6.2/15 (NEMA 6-15) | 111 | 130.1 x 87.3 x 71.9 | 198.1 x 100.6 x 97.7** | 372 |
| TDE60086FV | | | 230V/50Hz | 6.1/10 (European) | | | | |

*Allowance for handle and hinge, add 10.7 cm to cabinet width

**Doorway width clearance is 87.6 cm for TDE50086 and TDE60086



Performance Data

| Model Series | Energy Consumption* (kW-hr/day) | Peak Variation from -80°C Setpoint (°C)** | 60 Second Door Opening Recovery Time (minutes) | Warm-Up Time (-80°C to -50°C) (minutes)*** | Noise Level (dBA) |
|--------------|---------------------------------|---|--|--|-------------------|
| TDE30086 | 11.2 | +5.9/-3.7 | 14 | 248 | 52 |
| TDE40086 | 12.3 | +5.7/-2.9 | 17 | 257 | 51 |
| TDE50086 | 12.7 | +4.2/-2.9 | 21 | 260 | 50 |
| TDE60086 | 14.2 | +3.4/-2.9 | 24 | 297 | 50 |

*Energy Consumption: Typical data - internal testing with freezer setpoint at -80°C and 20°C ambient temperature

**Peak Variation from Setpoint: Typical data - internal testing with freezer setpoint at -80°C and 20°C ambient temperature

***Warm Up Time: Typical data - internal testing with empty freezer setpoint at -80°C and ambient temperature at 20°C

Options (Field installations must be performed by a qualified professional)

| Description | Installation | For Model Series | | | |
|--|--------------|-------------------------------------|-------------------------------------|---------------------------|---------------------------|
| | | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
| LN₂ Backup System Maintains temperature down to -80°C with liquid nitrogen. Models for TDE30086 are stand alone. | Factory | N/A | LN4567 | LN4567 | LN4567 |
| | Field | FLN300D* FLN300V** FLN300W*** | FLN456LED* FLN456LEV** | FLN456LED* FLN456LEV** | FLN456LED* FLN456LEV** |
| CO₂ Backup System Maintains temperature down to -67°C with CO ₂ . Models for TDE30086 are stand alone. | Factory | N/A | CO4567 | CO4567 | CO4567 |
| | Field | FCO300D* FCO300V** FCO300W*** | FCO456LED* FCO456LEV** | FCO456LED* FCO456LEV** | FCO456LED* FCO456LEV** |
| Chart Recorder (Inkless) Seven-day inkless recorder Range: -115° to +50°C (+5°C resolution) Dia.: 6" (15.2cm) | Factory | N/A | N/A | CR4567 | CR4567 |
| | Field | N/A | N/A | FCR500LE | FCR600LE |
| Chart Recorder (Ink) Seven day ink recorder Range: -100° to +38°C (+2°C resolution) Dia.: 6" (15.2cm) Models for TDE30086 and TDE40086 are stand alone. | Factory | N/A | N/A | CRP4567 | CRP4567 |
| | Field | 6383-6D* 6383-6V** 6383-6W*** | 6383-6D* 6383-6V** 6383-6W*** | FCRP500LE | FCRP600LE |
| Stainless Steel Freezer Interior | Factory | SS34567 | SS34567 | SS34567 | SS34567 |
| Twist Lock Plug NEMA L6-15P for 208-230V/60Hz | Factory | US230V15ATL | US230V15ATL | US230V15ATL | US230V15ATL |
| | Field | TL230V15A | TL230V15A | TL230V15A | TL230V15A |
| Twist Lock Plug NEMA L6-20P for 208-230V/60Hz | Factory | US230V20ATL | US230V20ATL | US230V20ATL | US230V20ATL |
| | Field | TL230V20A | TL230V20A | TL230V20A | TL230V20A |

* D = 208-230V/60Hz (NEMA 6-15 plug)

** V = 230V/50Hz (European plug)



*** W = 230V/50Hz (UK plug)

Accessories



| Description | For Model Series | | | |
|---|------------------|-----------|-----------|-----------|
| | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
| Air Filter (Replacement) | AF34567LE | AF34567LE | AF34567LE | AF34567LE |
| Alarm Delay Module Eliminates nuisance alarms due to intermittent or transitory conditions. (The alarm conditions must exist for a user-defined period before the signal is broadcast.) | 6903 | 6903 | 6903 | 6903 |
| Battery Backup (Replacement) | 400159 | 400159 | 400159 | 400159 |
| Chart Paper, for Inkless Recorder, 50/Pack | N/A | N/A | 6185 | 6185 |
| Chart Paper, for Ink Recorder, 50/Pack | 17020 | 17020 | 17020 | 17020 |
| Cryo Gloves, Medium | 4425 | 4425 | 4425 | 4425 |
| Cryo Gloves, Large | 4426 | 4426 | 4426 | 4426 |
| Seismic Restraint Kits | TF-ULT300 | TF-ULT400 | TF-ULT500 | TF-ULT600 |
| Shelf Kits: Include One Shelf and Clips | SK300 | SK400 | SK500 | SK600 |

Racks for Boxes and Microplates

Racks for 5cm Boxes

| Catalog No. | Description | Dimensions H x W x D cm | Storage Capacities | For Model Series | | | |
|--|--------------------------------|----------------------------|--------------------|------------------|----------|----------|----------|
| | | | | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
|  920090 | Sliding Drawer Rack | 30.2 x 14 x 68.3 | Boxes/Rack | 25 | 25 | 25 | 25 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Boxes/Freezer | 300 | 400 | 500 | 600 |
|  1950520 | Adjustable Side Access Rack | 29.5 x 13.7 x 67.9 | Boxes/Rack | 25 | 25 | 25 | 25 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Boxes/Freezer | 300 | 400 | 500 | 600 |




Racks for 7.62 cm Boxes

| Catalog No. | Description | Dimensions H x W x D cm | Storage Capacities | For Model Series | | | |
|--|---|----------------------------|--------------------|------------------|----------|----------|----------|
| | | | | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
|  920091 | Sliding Drawer Rack | 30.2 x 14 x 68.3 | Boxes/Rack | 15 | 15 | 15 | 15 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Boxes/Freezer | 180 | 240 | 300 | 360 |
|  1950521 | Adjustable Side Access Rack for 3 in. boxes | 29.5 x 13.7 x 67.9 | Boxes/Rack | 15 | 15 | 15 | 15 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Boxes/Freezer | 180 | 240 | 300 | 360 |

Racking Shelf Kits

| Description | Storage Capacities | For Model Series | | | |
|---|--------------------|------------------|-----------|-----------|-----------|
| | | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
| | Catalog No. | RSK300SD4 | RSK400SD4 | RSK500SD4 | RSK600SD4 |
| Sliding Drawer Racks with Boxes for One Shelf (12.7 x 12.7 x 5 cm Boxes with 100-Count Cell Dividers) | Racks Included | 3 | 4 | 5 | 6 |
| | Boxes Included | 75 | 100 | 125 | 150 |

Racks for Standard or Deepwell Microplates

| Catalog No. | Description | Dimensions H x W x D cm | Storage Capacities | For Model Series | | | |
|--|-----------------------------------|----------------------------|--------------------|------------------|----------|----------|----------|
| | | | | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
|  1950592 | Side Access Rack with Locking Rod | 30.2 x 14 x 65.3 | Plates/Rack | 147 | 147 | 147 | 147 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Plates/Freezer | 1,764 | 2,352 | 2,940 | 3,528 |
|  1950523 | Side Access Microplate Rack | 30.2 x 14 x 65.3 | Plates/Rack | 105 | 105 | 105 | 105 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Plates/Freezer | 1,260 | 1,680 | 2,100 | 2,520 |
|  1950642 | Sliding Drawer Microplate Rack | 30.2 x 14 x 66.3 | Plates/Rack | 35 | 35 | 35 | 35 |
| | | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | | Plates/Freezer | 420 | 560 | 700 | 840 |

Boxes and Dividers

| Catalog No. | Description | # of Dividers | Quantity | Color |
|-------------|---|---------------|----------|----------|
| 5026-0909 | Thermo Scientific™ Nalgene™ polycarbonate 5.08 cm box for 1.2 to 2 mL vials | 81 | 24/Case | White |
| 5954 | 5.08 cm Fiberboard Box | 0 | 12/Pack | White |
| 820002 | 5.08 cm Fiberboard Box | 81 | 1 | White |
| 820109 | 5.08 cm Fiberboard Box | 100 | 1 | White |
| 5956 | 7.62 cm Fiberboard Box | 0 | 12/Pack | White |
| 820003 | 7.62 cm Fiberboard Box | 81 | 1 | White |
| 1950878 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Multiple |
| 1950879 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Pink |
| 1950880 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Red |
| 1950881 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Yellow |
| 1950882 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Green |
| 1950883 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Blue |
| 1950884 | 5.08 cm Fiberboard Box | 0 | 12/Pack | Black |

Fiberboard Dividers

| Catalog No. | Description | Quantity/Pack |
|-------------|---|---------------|
| 5958 | Grid Dividers, Hold 100 x 12 mm Tubes/Vials | 12 |
| 6212 | Grid Dividers, Hold 81 x 13 mm Tubes/Vials | 12 |
| 5960 | Grid Dividers, Hold 64 x 14 mm Tubes/Vials | 12 |
| 5959 | Grid Dividers, Hold 49 x 16 mm Tubes/Vials | 12 |

Vials and Tubes

| Catalog No. | Description | Quantity |
|-------------|--|------------|
| 377267 | Thermo Scientific™ Nunc™ 1.8 mL Screw-Top Round-Bottom Vials with Internal Threading | 1,800/Case |

Sliding Drawer Racks for Matrix and Cryobank Tubes

Racks work with all Thermo Scientific™ Matrix™ and Nunc™ Cryobank Tubes

| | | For Model Series | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
|---|---|--------------------------------------|---------------------|---------------------|---------------------|---------------------|
| 200 µL Capacity Tubes | | | | | | |
| 3747, 3748, 4988 | Matrix 200 µL 2D Internally Threaded Universal Tubes Box Dimensions: 8.5 x 12.8 x 2.75 cm | Rack Model No. | 1950787 | 1950787 | 1950787 | 1950787 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| | | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 56 | 56 | 56 | 56 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 64,512 | 86,016 | 107,520 | 129,024 |
| 500 µL Capacity Tubes | | | | | | |
| 3734, 3735, 4898 | Matrix 500 µL 2D Open Top Tubes Box Dimensions: 8.5 x 12.8 x 2.6 cm | Rack Model No. | 1950787 | 1950787 | 1950787 | 1950787 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| 3736, 3737, 4899 | Matrix 200 µL 2D Internally Threaded Universal Tubes with Installed DuraSeal™ Seal Box Dimensions: 8.5 x 12.8 x 2.75 cm | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 56 | 56 | 56 | 56 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 64,512 | 86,016 | 107,520 | 129,024 |
| 374086, 374087 (including color options) | Nunc Cryobank 500 µL Internally Threaded Tubes Box Dimensions: 8.5 x 12.8 x 3.5 cm | Rack Model No. | 1950791 | 1950791 | 1950791 | 1950791 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| 3743, 3744, 3745 (including color options) | Matrix 500 µL 2D Internally Threaded ScrewTop Tubes Box Dimensions: 8.5 x 12.8 x 4.4 cm | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 42 | 42 | 42 | 42 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 48,384 | 64,512 | 80,640 | 96,768 |

Sliding Drawer Racks for Matrix and Cryobank Tubes

Racks work with all Thermo Scientific™ Matrix™ and Nunc™ Cryobank Tubes

| | | For Model Series | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
|---|---|---|---------------------|---------------------|---------------------|---------------------|
| 750 µL Capacity Tubes | | | | | | |
| 3731, 3732, 4896 | Matrix 750 µL 2D Open Top Tubes Box Dimensions: 8.5 x 12.8 x 3.9 cm | Rack Model No. | 1950791 | 1950791 | 1950791 | 1950791 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| 3729, 4896 | Matrix 750 µL 2D Tubes with Installed DuraSeal Seal Box Dimensions: 8.5 x 12.8 x 3.9 cm | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 42 | 42 | 42 | 42 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 48,384 | 64,512 | 80,640 | 96,768 |
| 1 mL Capacity Tubes | | | | | | |
| 374088, 374089 (including color options) | Nunc Cryobank 1 mL Internally Threaded Tubes Box Dimensions: 8.5 x 12.8 x 4.9 cm | Rack Model No. | 1950642 | 1950642 | 1950642 | 1950642 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| | | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 35 | 35 | 35 | 35 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 40,320 | 53,760 | 67,200 | 80,640 |
| 3740, 3741, 3742 (including color options) | Matrix 1 mL 2D Internally Threaded Screw Top Tubes Box Dimensions: 8.5 x 12.8 x 5.8 cm | Rack Model No. | 1950799 | 1950799 | 1950799 | 1950799 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| | | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 28 | 28 | 28 | 28 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 32,256 | 43,008 | 53,760 | 64,512 |

Sliding Drawer Racks for Matrix and Cryobank Tubes

Racks work with all Thermo Scientific™ Matrix™ and Nunc™ Cryobank Tubes

| | | For Model Series | TDE30086 | TDE40086 | TDE50086 | TDE60086 |
|-----------------------------------|--|---|---------------------|---------------------|---------------------|---------------------|
| 1.4 mL Capacity Tubes | | | | | | |
| 3791, 3792, 4890 | Matrix 1.4 mL 2D Open Top Tubes Box Dimensions: 8.5 x 12.8 x 4.9 cm | Rack Model No. | 1950642 | 1950642 | 1950642 | 1950642 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| 3801, 4890 | Matrix 1.4 mL 2D Tubes with Installed DuraSeal Seal Box Dimensions: 8.5 x 12.8 x 4.9 cm | Tubes/Box | 96 | 96 | 96 | 96 |
| | | Boxes/Rack | 35 | 35 | 35 | 35 |
| 3711, 3112, 4890 | Thermo Scientific Matrix 1.4 mL Human Readable Open Top Tubes Box Dimensions: 8.5 x 12.8 x 4.9 cm | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 40,320 | 53,760 | 67,200 | 80,640 |
| 1.8 to 2 mL Capacity Tubes | | | | | | |
| 374500, 374501 | Nunc 1.8 mL Externally Threaded Universal Tubes Box Dimensions: 8.5 x 12.8 x 5.5cm | Rack Model No. | 1950642 | 1950642 | 1950642 | 1950642 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| 374221, 374223 | Nunc Cryobank 2 mL Internally Threaded Tubes Box Dimension: 8.5 x 12.8 x 5.5 cm | Tubes/Box | 48 | 48 | 48 | 48 |
| | | Boxes/Rack | 35 | 35 | 35 | 35 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 20,160 | 26,880 | 33,600 | 40,320 |
| 5 mL Capacity Tubes | | | | | | |
| 374220, 374222 | Nunc Cryobank 5 mL Internally Threaded Tubes Box Dimensions: 8.5 x 12.8 x 9.6 cm | Rack Model No. | 1950819 | 1950819 | 1950819 | 1950819 |
| | | Freezer Rack Dimensions W x H x D | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm | 14 x 30.3 x 68.5 cm |
| | | Tubes/Box | 48 | 48 | 48 | 48 |
| | | Boxes/Rack | 21 | 21 | 21 | 21 |
| | | Racks/Shelf | 3 | 4 | 5 | 6 |
| | | Racks/Freezer | 12 | 16 | 20 | 24 |
| | | Tubes/Freezer | 12,096 | 16,128 | 20,160 | 24,192 |