thermo scientific




# Thermo Scientific TDE Series Ultra-Low Temperature Freezers

ThermoFisher SCIENTIFIC

# 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 11 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 9.2 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

## 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
- Egonomic 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

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### 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-ULTS | 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-ULTS | | | 230V/50Hz | 5.9/10 (European) | | | | |
| TDE40086FD-ULTS | 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-ULTS | | | 230V/50Hz | 5.3/10 (European) | | | | |
| TDE50086FD-ULTS | 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-ULTS | | | 230V/50Hz | 5.9/10 (European) | | | | |
| TDE60086FD-ULTS | 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-ULTS | | | 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 FDE50086-ULTS and FDE60086-ULTS




### 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-ULTS | 9.2 | +6.3/-3.6 | 11 | 268 | 52 |
| TDE40086-ULTS | 10.4 | +5.7/-3.5 | 15 | 271 | 51 |
| TDE50086-ULTS | 10.3 | +4.2/-3.8 | 16 | 312 | 50 |
| TDE60086-ULTS | 11.9 | +5.8/-3.3 | 21 | 352 | 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 |
| **$LN_2$ Backup System**<br>Maintains temperature down to -80°C with liquid nitrogen.<br>*Models for FDE30086 are stand alone.* | Field | FLN300D*<br>FLN300V**<br>FLN300W*** | FLN456LED*<br>FLN456LEV** | FLN456LED*<br>FLN456LEV** | FLN456LED*<br>FLN456LEV** |
| **$CO_2$ Backup System**<br>Maintains temperature down to -67°C with $CO_2$.<br>*Models for FDE30086 are stand alone.* | Field | FCO300D*<br>FCO300V**<br>FCO300W*** | FCO456LED*<br>FCO456LEV** | FCO456LED*<br>FCO456LEV** | FCO456LED*<br>FCO456LEV** |
| **Chart Recorder (Inkless)**<br>Seven-day inkless recorder<br>Range: -115° to +50°C (+5°C resolution)<br>Dia.: 6" (15.2cm) | Field | N/A | N/A | FCR500LE | FCR600LE |
| **Chart Recorder (Ink)**<br>Seven day ink recorder<br>Range: -100° to +38°C (+2°C resolution)<br>Dia.: 6" (15.2 cm)<br>*Models for FDE30086-ULTS and FDE40086-ULTS are stand alone.* | Field | 6383-6D*<br>6383-6V**<br>6383-6W*** | 6383-6D*<br>6383-6V**<br>6383-6W*** | FCRP500LE | FCRP600LE |
| **Stainless Steel Freezer Interior** | Factory | SS34567-ULTS | SS34567-ULTS | SS34567-ULTS | SS34567-ULTS |
| **Five Inner Door, 4-shelf Configuration**<br>Reduces temperature losses from door openings<br>Includes additional shelf for a total of 5 compartments | Factory | STP5INNERDOOR-ULTS | STP5INNERDOOR-ULTS | STP5INNERDOOR-ULTS | STP5INNERDOOR-ULTS |
| **High-end User Interface**<br>Large 7" screen<br>USB port for data download | Factory | UI34567H-ULTS | UI34567H-ULTS | UI34567H-ULTS | UI34567H-ULTS |
| **Access Key Option Card**<br>Access control includes 5 key cards<br>Supports ISO15693 and ISO14443 protocols<br>Requires high-end user interface | Factory | RAC34567-ULTS | RAC34567-ULTS | RAC34567-ULTS | RAC34567-ULTS |
| **Twist Lock Plug** NEMA L6-15P for 208-230V/60Hz | Factory | US230V15ATL-ULTS | US230V15ATL-ULTS | US230V15ATL-ULTS | US230V15ATL-ULTS |
| | Field | TL230V15A | TL230V15A | TL230V15A | TL230V15A |
| **Twist Lock Plug** NEMA L6-20P for 208-230V/60Hz | Factory | US230V20ATL-ULTS | US230V20ATL-ULTS | US230V20ATL-ULTS | US230V20ATL-ULTS |
| | 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**<br>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 |