Thermo Scientific Forma FDE Series Ultra-Low Temperature Freezers

Medical Device

ThermoFisher
SCIENTIFIC

Thermo Scientific™ Forma™ FDE 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

- FDA Class II Medical Device for Storage of Blood, Plasma, Tissue, Skin, and Bone[3]

- 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.
3. FDA Class II Models are listed under product code KSE, regulation number 864.9700. This unit is not intended for use in classified hazardous locations, nor to be used for the storage of flammable inventory.
   Reference: AABB - Technical Manual 17th Ed., page 273,274. STANDARDS FOR TISSUE BANKING 14th Ed., Section E, E3.300, E3.310, Table E3.331.
   Note for clarity: The 'Bone' is the Osteoarticular Graft, a weight bearing allograft with intact articular surfaces, consisting of a joint with associated soft tissue and bone. STANDARDS FOR TISSUE BANKING 14th Ed., Section page 8.

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

White blood and plasma   Clinical applications   Get Connected

Upright Freezers (-50°C to -86°C)

FDA Class II 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						
FDE30086LD	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
FDE30086LV			230V/50Hz	5.9/10 (European)				
FDE40086LD	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
FDE40086LV			230V/50Hz	5.3/10 (European)				
FDE50086LD	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
FDE50086LV			230V/50Hz	5.9/10 (European)				
FDE60086LD	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
FDE60086LV			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 and FDE60086

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)
FDE30086	11.2	+5.9/-3.7	14	248	52
FDE40086	12.3	+5.7/-2.9	17	257	51
FDE50086	12.7	+4.2/-2.9	21	260	50
FDE60086	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			
		FDE30086	FDE40086	FDE50086	FDE60086
LN₂ Backup System Maintains temperature down to -80°C with liquid nitrogen. *Models for FDE30086 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 CO₂. *Models for FDE30086 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 FDE30086 and FDE40086 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			
	FDE30086	FDE40086	FDE50086	FDE60086
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 5 cm Boxes

Catalog No.	Description	Dimensions H x W x D cm	Storage Capacities	For Model Series			
				FDE30086	FDE40086	FDE50086	FDE60086
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
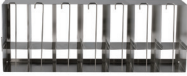
Racks for 7.62 cm Boxes

Catalog No.	Description	Dimensions H x W x D cm	Storage Capacities	For Model Series			
				FDE30086	FDE40086	FDE50086	FDE60086
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			
		FDE30086	FDE40086	FDE50086	FDE60086
	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			
				FDE30086	FDE40086	FDE50086	FDE60086
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	FDE30086	FDE40086	FDE50086	FDE60086
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	FDE30086	FDE40086	FDE50086	FDE60086
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 750µL 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

thermo scientific

Sliding Drawer Racks for Matrix and Cryobank Tubes

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

For Model Series		FDE30086	FDE40086	FDE50086	FDE60086
1.4 mL Capacity Tubes					
		Rack Model No.	**1950642**	**1950642**	**1950642**	**1950642**
3791, 3792, 4890	Matrix 1.4 mL 2D Open Top Tubes Box Dimensions: 8.5 x 12.8 x 4.9 cm	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	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	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					
		Rack Model No.	**1950642**	**1950642**	**1950642**	**1950642**
374500, 374501	Nunc 1.8 mL Externally Threaded Universal Tubes Box Dimensions: 8.5 x 12.8 x 5.5 cm	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					
		Rack Model No.	**1950819**	**1950819**	**1950819**	**1950819**
374220, 374222	Nunc Cryobank 5 mL Internally Threaded Tubes Box Dimensions: 8.5 x 12.8 x 9.6 cm	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

ThermoFisher
SCIENTIFIC

WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct.
If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

www.wolflabs.co.uk

Tel : 01759 301142

Fax : 01759 301143

sales@wolflabs.co.uk

Please contact us if this literature doesn't answer all your questions.