



Thermo Scientific Forma High-Performance Laboratory Refrigerators and Freezers

**Designed for your clinical, diagnostic
and research needs**

It's a cold hard fact:

Temperature variation can have an impact on the viability of samples and the efficacy of reagents. These variations can shorten product shelf life, degrade enzymes and reduce vaccine effectiveness. Therefore, it's important to choose a high-performance refrigerator or freezer that has been designed for the demanding standards of the clinical and laboratory environment.

We continually search for ways to enhance our products and processes responsibly:

- Reduce the use of refrigerants in our cold storage equipment
- Use solvent-free, paint technology
- All of our high-performance refrigerators and freezers are manufactured in a zero waste to landfill facility
- Fluorescent lighting in our refrigerators replaced with mercury-free, LED lights

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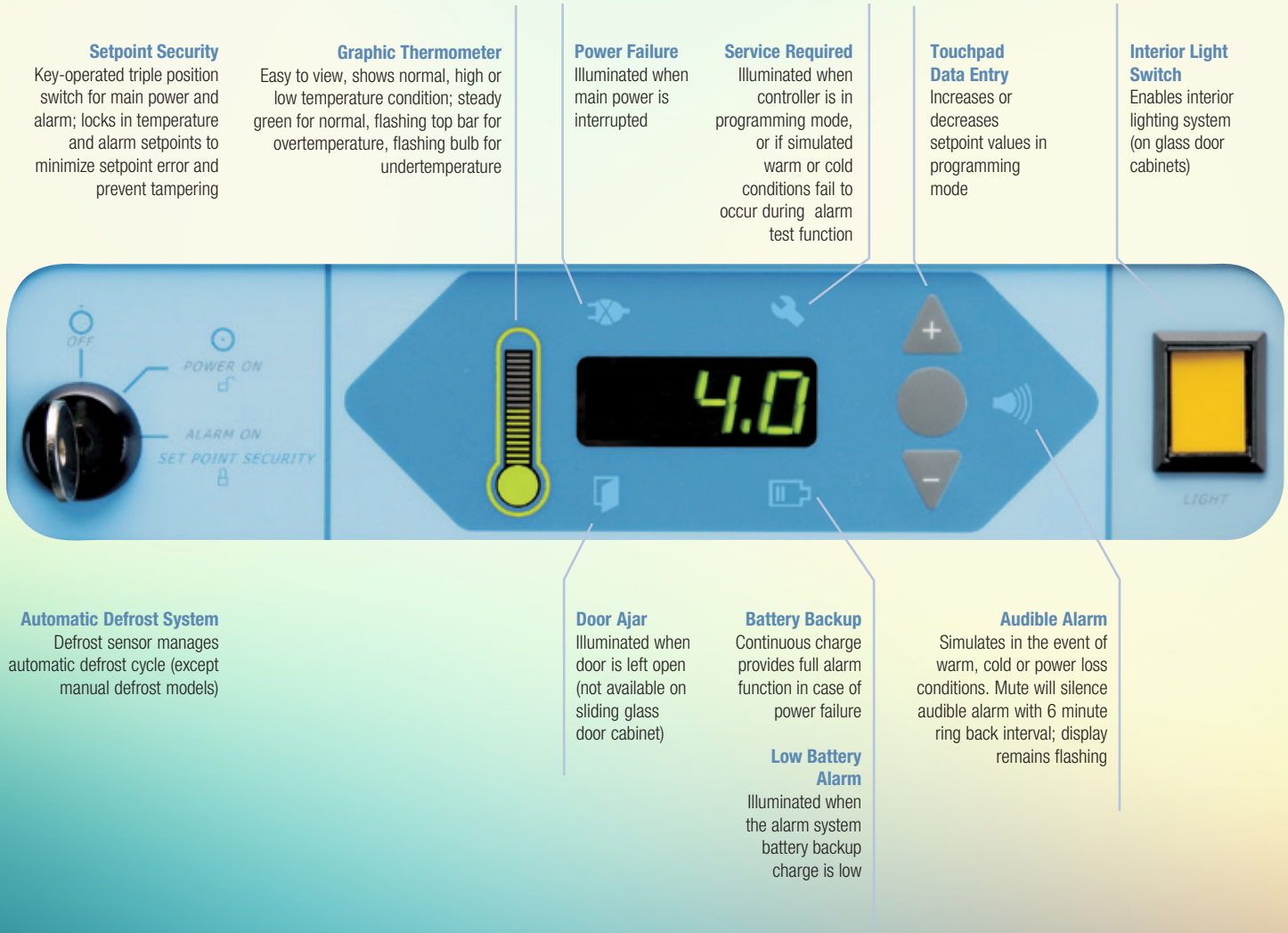
FLAMMABLE MATERIAL

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Microprocessor-Based Controller

simplifies operation, improves reliability



Our bright, easy to read display lets you know at-a-glance if your unit is running within range. Visual and audio alarms are designed to alert you in the event of a problem. Immediate access to high and low temperature parameters with the press of a button.

Touchpad Scan

Changes main display; also used to access various programming and service functions (alarm mute, recall 6 minutes).

Digital Display

Indicates cabinet temperature during normal operation, flashes during alarm condition or setpoint adjustment. Displays other values with touchpad sequence.

Service Parameters

Touchpad sequence allows override access to control function defaults for troubleshooting functions.



Biologics

Diagnostic
Kits &
Reagents

Industrial
Testing

Molecular
Biology

Vaccines
& Pharma

Clinical
Applications

Laboratory Refrigerators

Our Forma **high-performance, laboratory refrigerators** are available in a wide range of cabinet sizes to fit a variety of storage requirements and laboratory footprints.

Would you like to customize your glass door refrigerator?

See page 17 for options and accessories.

- **Forced air circulation for uniform temperature at all shelf levels**
- **Heat-free defrost for maximum uniformity**
- **Choice of glass or solid doors**
- **Four casters, for easy mobility; the front two are lockable**
- **1" (2.5cm) insulated access port**
- **Bright, LED interior lighting**
- **Adjustable, epoxy-coated wire shelves are standard (optional drawers)**
- **Keyed on/off switch with setpoint security**
- **Self-closing door with 90° stop to assist with inventory loads (except sliding glass door REL4504 model)**
- **Built-in remote alarm contacts**
- **Optional +5°C setpoint can be customized for users validating lab refrigerators in the +2 to +8°C setpoint (not available on 45 cu. ft. sliding door or 78 cu. ft. trip door models; order option 7508TA with your lab refrigerator)**

Thermo Scientific Forma High-Performance Laboratory Refrigerators With Glass Doors

Temperature Range: +1°C to +8°C, factory preset to +4°C (auto defrost) Optional +5°C setpoint available (order option 7508TA)

Model No.	Cu. Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Adjustable Shelves	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FRGG404A	4.9	115 (60)	UL	NEMA 5-15	undercounter	single	3	20.0 x 20.5 x 20.0	33.4 x 26.0 x 24.0	220
FRGG404D	(133)	208/230 (60)	UL	NEMA 6-15				(508 x 521 x 508)	(850 x 660 x 610)	(100)
FRGG404V		230 (50)	CE	European						
FRGG404W‡		230 (50)	CE	U.K.					Exterior height before caster installation.	
FRGG1204A	11.5	115 (60)	UL	NEMA 5-15	space saver	single	4	52.4 x 21.75 x 20.0	73.6 x 29.4 x 24.0	280
FRGG1204D	(326)	208/230 (60)	UL	NEMA 6-15				(1331 x 553 x 508)	(1869 x 748 x 610)	(127)
FRGG1204V		230 (50)	CE	European						
FRGG1204W‡		230 (50)	CE	U.K.						
FRGG2304A	23.3	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 24.0	79.2 x 37.2 x 28.0	370
FRGG2304D	(659)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 610)	(2012 x 945 x 711)	(168)
FRGG2304V		230 (50)	CE	European						
FRGG2304W‡		230 (50)	CE	U.K.						
FRGG3004A	29.2	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 30.0	79.2 x 37.2 x 34.0	435
FRGG3004D	(826)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 762)	(2012 x 945 x 864)	(197)
FRGG3004V		230 (50)	CE	European						
FRGG3004W‡		230 (50)	CE	U.K.						
FRGG4504A	45.8	115 (60)	UL	NEMA 5-15	upright	double	8	58.0 x 26.0 x 52.5	79.1 x 34.5 x 56.5	670
FRGG4504D	(1297)	208/230 (60)	UL	NEMA 6-15		sliding		(1473 x 660 x 1334)	(2010 x 876 x 1435)	(304)
FRGG4504V		230 (50)	CE	European						
FRGG4504W‡		230 (50)	CE	U.K.						
FRGG5004A	51.1	115 (60)	UL	NEMA 5-15	upright	double	8	58.0 x 29.0 x 52.5	79.2 x 37.2 x 56.5	585
FRGG5004D	(1447)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 1334)	(2012 x 945 x 1435)	(265)
FRGG5004V		230 (50)	CE	European						
FRGG5004W‡		230 (50)	CE	U.K.						
FRGG7504A	78.8	115 (60)	UL	NEMA 5-15	upright	triple	12	58.0 x 29.0 x 81.0	79.2 x 37.2 x 85.0	805
FRGG7504D	(2231)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 2057)	(2012 x 945 x 2159)	(365)
FRGG7504V		230 (50)	CE	European						
FRGG7504W		230 (50)	CE	U.K.						

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application. 4.7 cu. ft. exterior dimensions are without casters.

‡ Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.



Optional, inkless, seven day, graphic, chart recorder

Control Panel:

Keyed on/off switch with set point security

Microprocessor control system with audio and visual alarms

Bright, digital temperature display

Doors:

Spring-loaded, self closing doors with 90° stay-open feature

Lockable doors for added sample security

Cabinets shown: 23.3 cu. ft. single door (RGL2304) lab refrigerator with glass door and 51.1 cu. ft. double door (RGL5004) lab refrigerator with solid doors

Thermo Scientific Forma Laboratory Refrigerators With Solid Doors

Temperature Range: +1°C to +8°C, factory preset to +4°C (auto defrost) Optional +5°C setpoint available (order option 7508TA)

Model No.	Cu. Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Adjustable Shelves	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FRGL404A	4.9	115 (60)	UL	NEMA 5-15	undercounter	single	3	20.0 x 20.5 x 20.0	33.4 x 26.0 x 24.0	220
FRGL404D	(133)	208/230 (60)	UL	NEMA 6-15				(508 x 521 x 508)	(850 x 660 x 610)	(100)
FRGL404V		230 (50)	CE	European						
FRGL404W‡		230 (50)	CE	U.K.						
FRGL1204A	11.5	115 (60)	UL	NEMA 5-15	space	single	4	52.4 x 21.75 x 20.0	73.6 x 29.4 x 24.0	280
FRGL1204D	(326)	208/230 (60)	UL	NEMA 6-15	saver			(1331 x 553 x 508)	(1869 x 748 x 610)	(127)
FRGL1204V		230 (50)	CE	European						
FRGL1204W‡		230 (50)	CE	U.K.						
FRGL2304A	23.3	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 24.0	79.2 x 37.2 x 28.0	370
FRGL2304D	(659)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 610)	(2012 x 945 x 711)	(168)
FRGL2304V		230 (50)	CE	European						
FRGL2304W‡		230 (50)	CE	U.K.						
FRGL3004A	29.2	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 30.0	79.2 x 37.2 x 34.0	435
FRGL3004D	(826)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 762)	(2012 x 945 x 864)	(197)
FRGL3004V		230 (50)	CE	European						
FRGL3004W‡		230 (50)	CE	U.K.						
FRGL5004A	51.1	115 (60)	UL	NEMA 5-15	upright	double	8	58.0 x 29.0 x 52.5	79.2 x 37.2 x 56.5	585
FRGL5004D	(1447)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 1334)	(2012 x 945 x 1435)	(265)
FRGL5004V		230 (50)	CE	European						
FRGL5004W‡		230 (50)	CE	U.K.						
FRGL7504A	78.8	115 (60)	UL	NEMA 5-15	upright	triple	12	58.0 x 29.0 x 81.0	79.2 x 37.2 x 85.0	805
FRGL7504D	(2231)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 2057)	(2012 x 945 x 2159)	(365)
FRGL7504V		230 (50)	CE	European						
FRGL7504W		230 (50)	CE	U.K.						

► **Would you like to customize your solid door refrigerator?** See page 17 for options and accessories.

* Published interior volumes are nominal; useable cu. ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application. 4.7 cu. ft. exterior dimensions are without casters.

‡ Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.

Chromatography Refrigerators



Our **Forma high-performance chromatography refrigerators** are designed for a variety of applications requiring close temperature control, full access to chromatography instrumentation, and easy set-up of instrumentation and apparatus within the chamber.

- Forced air circulation for uniform temperature at all shelf levels
- Heat-free defrost for maximum uniformity
- Two 2" (5 cm) access ports with insulated hinged covers
- Interior plug outlet (duplex on A and D models; single on V and W models)
- Four casters for easy mobility, front two are lockable
- Bright, LED interior lighting
- Adjustable, epoxy-coated wire shelves are standard (optional drawers)
- Keyed on/off switch with setpoint security
- Self-closing door with 90° stop (except FRCR4504 sliding glass door model)
- Built-in remote alarm contacts
- Optional 4-20 milliamp output



Thermo Scientific Forma High-Performance Chromatography Refrigerators

Temperature Range: +1°C to +8°C, factory preset to +4°C (auto defrost)

Model No.	Cu. Ft. (L)	Voltage (Hz)	Certification	Plug	Door	Full Adjustable Shelves	Half Adjustable Shelves	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FRCR2304A	23.3	115 (60)	UL	NEMA 5-15	single, glass	0	2	58.0 x 29.0 x 24.0	79.2 x 36.4 x 28.0	425
FRCR2304D	(659)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 610)	(2012 x 925 x 711)	(193)
FRCR2304V		230 (50)	CE	European						
FRCR2304W [†]		230 (50)	CE	U.K.						
FRCR3004A	29.2	115 (60)	UL	NEMA 5-15	single, glass	0	2	58.0 x 29.0 x 30.0	79.2 x 36.4 x 34.0	435
FRCR3004D	(826)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 762)	(2012 x 925 x 864)	(197)
FRCR3004V		230 (50)	CE	European						
FRCR3004W [†]		230 (50)	CE	U.K.						
FRCR4504A	45.8	115 (60)	UL	NEMA 5-15	double, sliding glass	4	2	58.0 x 26.0 x 52.5	79.1 x 34.5 x 56.5	670
FRCR4504D	(1297)	208/230 (60)	UL	NEMA 6-15				(1473 x 660 x 1334)	(2010 x 838 x 1435)	(304)
FRCR4504V		230 (50)	CE	European						
FRCR4504W [†]		230 (50)	CE	U.K.						
FRCR5004A	51.1	115 (60)	UL	NEMA 5-15	double, glass	4	2	58.0 x 29.0 x 52.5	79.2 x 36.4 x 56.5	580
FRCR5004D	(1447)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 1334)	(2012 x 925 x 1435)	(263)
FRCR5004V		230 (50)	CE	European						
FRCR5004W [†]		230 (W)	CE	U.K.						
FRCR7504A	78.8	115 (60)	UL	NEMA 5-15	triple, glass	8	2	58.0 x 29.0 x 81.0	79.2 x 36.4 x 85.0	965
FRCR7504D	(2231)	208/230 (60)	UL	NEMA 6-15				(1473 x 737 x 2057)	(2012 x 925 x 2159)	(438)
FRCR7504V		230 (50)	CE	European						
FRCR7504W		230 (W)	CE	U.K.						

► **Would you like to customize your chromatography refrigerator? See page 17 for options and accessories.**

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application.

[†] Note for Australia and New Zealand: Due to the units having two power cords (one for unit, one for internal receptacle), units are supplied with 15A power cords.



Blood Bank Refrigerators



Our **Forma high-performance blood bank refrigerators** are designed to meet strict requirements established by the AABB for storage of whole blood and blood components. DIN 58371 compliant for our 326, 659 and 826 liter capacity units (230V/50Hz only).

The complete selection of +4°C refrigerators feature simplified push-button alarm test functions and reliable, field-proven refrigeration systems.

- Forced air circulation for uniform temperature and fast door opening recovery
- Heat-free defrost for maximum temperature uniformity
- Built-in chart recorder (freestanding on 4.9 cu. ft. undercounter model)
- Second cabinet temperature probe
- Four casters for easy mobility, front two are lockable
- 1" (2.5cm) insulated access port
- Bright, LED interior lighting
- Stainless steel, full extendable and adjustable drawers (optional shelves)
- Keyed on/off switch with setpoint security
- Self-closing door with 90° stop for easy inventory loads
- Built-in remote alarm contacts
- Optional 4-20 milliamp output



► **Would you like to customize your blood bank refrigerator?**
See page 17 for options and accessories.

Thermo Scientific Forma High-Performance Blood Bank Refrigerators

Temperature Range: +1°C to +8°C, factory preset to +4°C (auto defrost)

Model No.	Cu. Ft./L (Blood Bag Capacity)**	Voltage (Hz)	Certification	Plug	Cabinet	Door	Drawers	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FRBB404A	4.9/133	115 (60)	UL	NEMA 5-15	undercounter	single,	2	20.0 x 20.5 x 20.0	33.4 x 26.0 x 24.0	220
FRBB404D	(64)	208/230 (60)	UL	NEMA 6-15		solid		(508 x 520 x 508)	(850 x 660 x 610)	(100)
FRBB404V		230 (50)	CE	European						
FRBB404W†		230 (50)	CE	U.K.						
An additional 2" is added when standard casters are installed.										
FRBB1204A	11.5/326	115 (60)	UL	NEMA 5-15	space saver	single,	6	52.4 x 21.75 x 20.0	73.6 x 29.4 x 24.0	320
FRBB1204D	(192)	208/230 (60)	UL	NEMA 6-15		glass		(1331 x 552 x 508)	(1869 x 762 x 610)	(145)
FRBB1204V		230 (50)	CE	European						
FRBB1204W†		230 (50)	CE	U.K.						
FRBB2304A	23.3/659	115 (60)	UL	NEMA 5-15	upright	single,	7	58.0 x 29.0 x 24.0	79.2 x 36.4 x 28.0	470
FRBB2304D	(385)	208/230 (60)	UL	NEMA 6-15		glass		(1473 x 737 x 610)	(2012 x 925 x 711)	(213)
FRBB2304V		230 (50)	CE	European						
FRBB2304W†		230 (50)	CE	U.K.						
FRBB3004A	29.2/826	115 (60)	UL	NEMA 5-15	upright	single,	6	58.0 x 29.0 x 30.0	79.2 x 36.4 x 34.0	505
FRBB3004D	(426)	208/230 (60)	UL	NEMA 6-15		glass		(1473 x 737 x 762)	(2012 x 925 x 864)	(229)
FRBB3004V		230 (50)	CE	European						
FRBB3004W†		230 (50)	CE	U.K.						
FRBB5004A	51.1/1447	115 (60)	UL	NEMA 5-15	upright	double,	14	58.0 x 29.0 x 52.5	79.2 x 36.4 x 56.5	640
FRBB5004D	(770)	208/230 (60)	UL	NEMA 6-15		glass		(1473 x 737 x 1334)	(2012 x 925 x 1435)	(290)
FRBB5004V		230 (50)	CE	European						
FRBB5004W†		230 (50)	CE	U.K.						

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application. 4.9 cu. ft. exterior dimensions are without casters.

** Nominal capacity based on 450 mL whole blood bags.

Independent automated monitoring is required such as a chart recorder. Note: this medical application is considered Class II.

† Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.



Vaccines
& Pharma



Clinical
Applications



Diagnostic
Kits &
Reagents

Pharmacy Refrigerators



Available in four sizes, **our Forma high-performance pharmacy refrigerators** feature adjustable basket drawers and glass doors for the easy identification of chemotherapeutics, vaccines, pharmaceuticals and other material requiring 2 to 8°C storage.



- Forced air circulation for uniform temperature at all drawer levels
- Heat-free defrost for maximum temperature uniformity
- Four casters for easy mobility, front two are lockable
- 1" (2.5cm) insulated access port
- Bright, LED interior lighting
- Convenient, fully extendable and adjustable wire basket drawers
- TempTest electronic probe/alarm test
- Keyed on/off switch with setpoint security
- Self-closing door with 90° stop to assist with inventory loads
- Built-in remote alarm contacts
- Optional 4-20 milliamp output

Thermo Scientific Forma High-Performance Pharmacy Refrigerators

Temperature Range: +1°C to +8°C, factory preset to +4°C (auto defrost)

Model No.	Cu. Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Basket Drawers	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FRPH1204A	11.5	115 (60)	UL	NEMA 5-15	upright	single,	5	52.4 x 21.8 x 20.0	73.6 x 29.4 x 24.0	320
FRPH1204D	(326)	208/230 (60)	UL	NEMA 6-15		glass		(1320 x 552 x 500)	(1869 x 762 x 610)	(145)
FRPH1204V		230 (50)	CE	European						
FRPH1204W‡		230 (50)	CE	U.K.						
FRPH2304A	23.3	115 (60)	UL	NEMA 5-15	upright	single,	6	58.0 x 29.0 x 24.0	79.2 x 36.4 x 28.0	470
FRPH2304D	(659)	208/230 (60)	UL	NEMA 6-15		glass		(1473 x 737 x 610)	(2012 x 925 x 711)	(213)
FRPH2304V		230 (50)	CE	European						
FRPH2304W‡		230 (50)	CE	U.K.						
FRPH3004A	29.2	115 (60)	UL	NEMA 5-15	upright	single,	6	58.0 x 29.0 x 30.0	79.2 x 36.4 x 34.0	505
FRPH3004D	(826)	208/230 (60)	UL	NEMA 6-15		glass		(1473 x 737 x 762)	(2012 x 925 x 864)	(227)
FRPH3004V		230 (50)	CE	European						
FRPH3004W‡		230 (50)	CE	U.K.						
FRPH5004A	51.1	115 (60)	UL	NEMA 5-15	upright	double,	12	58.0 x 29.0 x 52.5	79.2 x 36.4 x 56.5	640
FRPH5004D	(1447)	208/230 (60)	UL	NEMA 6-15		glass		(1473 x 737 x 1334)	(2012 x 925 x 1435)	(290)
FRPH5004V		230 (50)	CE	European						
FRPH5004W‡		230 (50)	CE	U.K.						

► **Would you like to customize your pharmacy refrigerator?** See page 17 for options and accessories.

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application.

‡ Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.



Flammable Material Refrigerators



Our **Forma FMS high-performance refrigerators** are designed to meet stringent US Pharmacopeia standards for drug storage as well as the NFPA safety provisions for the storage of flammable liquids.* Each model is listed by UL as a special purpose refrigerator or freezer intended for flammable material storage in accordance with NFPA 45, 70 and 99.* **Not available outside North America.**

- Ignition-free interior cabinet design
- Meets safety standards in accordance with UL, NFPA* and OSHA* for regulatory compliance
- Manual defrost
- Convenient access port and casters
- Optional, barrier-protected 4-20 milliamp output for external monitoring
- Optional, built-in, inkless, seven-day graphic chart recorder

* Products complying with the applicable requirements of NFPA 70, "National Electric Code", NFPA 45, "Fire Protection for Laboratories Using Chemicals," and NFPA 99 "Health Care Facilities" are considered to meet the OSHA guidelines for these types of facilities. These units have no internal electrical components that could trigger an explosion or fire of flammable materials inside the unit. Flammable material storage units are not for use in classified hazardous locations which require the use of explosion-proof units.

Thermo Scientific Forma FMS High-Performance Refrigerators (Not Available Outside North America)

Temperature Range: +1 to +8°C (preset +5°C)

Model No.	Cu. Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Shelves (Bins)	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FFMS2305A	23 (651)	115 (60)	UL	NEMA 5-20	upright	single	4	58.0 x 29.0 x 24.0 (1473 x 737 x 610)	79.2 x 37.2 x 28.0 (2012 x 945 x 711)	425 (193)

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application.



Biologics

Diagnostic
Kits &
Reagents

Industrial
Testing

Molecular
Biology

Laboratory Freezers

Automatic -30°C and Manual Defrost -20°C Laboratory Freezers

Our **Forma high-performance, laboratory freezers** are designed for medical and scientific applications requiring storage of reagents, pharmaceuticals, biologicals, and other commonly used laboratory materials such as primers, siRNA molecules and FBS (fetal bovine serum).

Automatic Defrost -30°C Models:

- Forced air circulation for uniform temperature and fast door opening recovery
- Non-invasive defrost with time and temperature guided cycle

Manual Defrost -20°C Models:

- Cold wall convection cooling for temperature uniformity
- Manual defrost for optimum control

All Models:

- Four casters, front two are lockable
- 1" (2.5cm) insulated access port
- Adjustable, epoxy-coated wire shelves are standard (optional drawers)
- Keyed on/off switch with setpoint security
- Self-closing door with 90° stop
- Built-in remote alarm contacts
- Optional 4-20 milliamp output

Thermo Scientific Forma High-Performance -30°C Freezers with Automatic Defrost

Model No.	Cu.Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Adjustable Shelves	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FFGL430A	4.9	115 (60)	UL	NEMA 5-15	undercounter	single	3	20.0 x 20.5 x 20.0	33.4 x 26.0 x 24.0	220
FFGL430D	(133)	208/230 (60)	UL	NEMA 6-16				(508 x 521 x 508)	(850 x 660 x 610)	(100)
FFGL430V		230 (50)	CE	European				Exterior height before caster installation.		
FFGL430W‡		230 (50)	CE	U.K.						
FFGL1230A	11.5	115 (60)	UL	NEMA 5-15	space saver	single	4	52.4 x 21.0 x 20.0	73.6 x 30.0 x 24.0	280
FFGL1230V	(326)	230 (50)	UL	European				(1331 x 553 x 508)	(1869 x 748 x 610)	(127)
FFGL1230W‡		230 (50)	CE	6.5/15 (P8)						
FFGL2330A	23.3	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 24.0	79.2 x 37.2 x 28.0	425
FFGL2330D	(659)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 610)	(2012 x 945 x 711)	(193)
FFGL2330V		230 (50)	CE	European						
FFGL2330W‡		230 (50)	CE	U.K.						
FFGL3030A	29.2	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 30.0	79.2 x 37.2 x 34.0	445
FFGL3030D	(826)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 762)	(2012 x 945 x 864)	(197)
FFGL3030V		230 (50)	CE	European						
FFGL3030W‡		230 (50)	CE	U.K.						
FFGL5030A	51.1	115 (60)	UL	NEMA 5-15	upright	double	8	58.0 x 29.0 x 52.5	79.2 x 37.2 x 56.5	600
FFGL5030D	(1447)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 1334)	(2012 x 945 x 1435)	(272)
FFGL5030V		230 (50)	CE	European						
FFGL5030W‡		230 (50)	CE	U.K.						

► **Would you like to customize your freezer?** See page 18 for options and accessories.

* Published interior volumes are nominal; useable cu. ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application. 4.7 cu. ft. exterior dimensions are without casters.

‡ Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.



Cabinets shown: 23.3 cu. ft. single door (ULT2304) lab freezer and 51.1 cu. ft. double door (ULT5030) lab freezer

Thermo Scientific Forma High-Performance -20°C Freezers with Manual Defrost

Model No.	Cu.Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Adjustable Shelves	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FFGL2320A	23.3	115 (60)	UL	NEMA 5-15	upright	single,	4	58.0 x 29.0 x 24.0	79.2 x 37.2 x 28.0	425
FFGL2320D	(659)	208/230 (60)	UL	NEMA 6-16		solid		(1473 x 737 x 610)	(2012 x 945 x 711)	(193)
FFGL2320V		230 (50)	CE	European						
FFGL2320W‡		230 (50)	CE	U.K.						
FFGL3020A	29.2	115 (60)	UL	NEMA 5-15	upright	single	4	58.0 x 29.0 x 30.0	79.2 x 37.2 x 34.0	445
FFGL3020D	(826)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 762)	(2012 x 945 x 864)	(197)
FFGL3020V		230 (50)	CE	European						

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application.

‡ Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.



Plasma Freezers

Our **Forma high-performance -30°C plasma freezers with automatic defrost** are designed to meet AABB standards for the safe storage of plasma safety and performance in plasma storage.

Five different models are available to meet your particular storage volume and lab space requirements.



- Forced air circulation for uniform temperature at all drawer levels
- Smart auto defrost with temperature guided cycle
- Standard, stainless steel interior
- Built-in chart recorder (4.9 cu. ft. model freestanding)
- Four casters for easy mobility, front two are lockable
- 1" (2.5cm) insulated access port
- Keyed on/off switch with setpoint security
- Self-closing door with 90° stop to assist with inventory loads
- Built-in remote alarm contacts
- Optional 4-20 milliamp output

Thermo Scientific Forma High-Performance -30°C Plasma Freezers with Automatic Defrost

Model No.	Cu.Ft./L (Plasma Box Capacity)**	Voltage (Hz)	Certification	Plug	Cabinet	Door	Drawers	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FFPF430A	4.9/133	115 (60)	UL	NEMA 5-15	undercounter	single	2	20.0 x 20.5 x 20.0	33.4 x 26.0 x 24.0	220
FFPF430D	(78)	208/230 (60)	UL	NEMA 6-16				(508 x 521 x 508)	(850 x 660 x 610)	(100)
FFPF430V		230 (50)	CE	European						
FFPF430W‡		230 (50)	CE	U.K.				Exterior height before caster installation		
FFPF1230A	11.5/326	115 (60)	UL	NEMA 5-15	space saver	single	7	52.4 x 21.0 x 20.0	73.6 x 30.0 x 24.0	365
FFPF1230V	(273)	230 (50)	CE	European				(1331 x 533 x 508)	(1869 x 762 x 610)	(166)
FFPF1230W‡		230 (50)	CE	U.K.						
FFPF2330A	23.3/659	115 (60)	UL	NEMA 5-15	upright	single	7	58.0 x 29.0 x 24.0	79.2 x 37.2 x 28.0	425
FFPF2330D	(532)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 610)	(2012 x 945 x 711)	(193)
FFPF2330V		230 (50)	CE	European						
FFPF2330W‡		230 (50)	CE	U.K.						
FFPF3030A	29.2/826	115 (60)	UL	NEMA 5-15	upright	single	7	58.0 x 29.0 x 30.0	79.2 x 37.2 x 34.0	580
FFPF3030D	(665)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 762)	(2012 x 945 x 864)	(263)
FFPF3030V		230 (50)	CE	European						
FFPF3030W‡		230 (50)	CE	U.K.						
FFPF5030A	51.1/1447	115 (60)	UL	NEMA 5-15	upright	double	14	58.0 x 29.0 x 52.5	79.2 x 37.2 x 56.5	600
FFPF5030D	(1064)	208/230 (60)	UL	NEMA 6-16				(1473 x 737 x 1334)	(2012 x 945 x 1435)	(272)
FFPF5030V		230 (50)	CE	European						
FFPF5030W‡		230 (50)	CE	U.K.						

► **Would you like to customize your plasma freezer? See page 18 for options and accessories.**

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application. 4.7 cu. ft. exterior dimensions are without casters.

** Nominal capacity based on 250 mL plasma boxes.

Independent automated monitoring is required such as a chart recorder. Note: this medical application is considered Class I.

‡Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.

Manual Defrost -20°C Enzyme Freezers



Our manual defrost **Forma high-performance, -20°C enzyme freezers** are designed for storage applications in which even slight intermittent coil warming during auto defrost cycles cannot be tolerated.

- Cold wall convection cooling for temperature uniformity at all shelf levels
- Manual defrost for optimum control
- Four casters for easy mobility, front two are lockable
- 1" (2.5cm) insulated access port
- Adjustable, epoxy-coated wire shelves are standard (optional drawers)
- 45 enzyme storage bins included
- Keyed on/off switch with setpoint security
- Self-closing door with 90° stop to assist with inventory loads
- Built-in remote alarm contacts
- Optional 4-20 milliamp output

Thermo Scientific Forma High-Performance -20°C Enzyme Freezers with Manual Defrost

Temperature Range: -20°C (manual defrost)										
Model No.	Cu.Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Shelves (Bins)	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FFEN2320A	23.3	115 (60)	UL	NEMA 5-15	upright	single	9 (45)	58.0 x 29.0 x 24.0	79.2 x 37.2 x 28.0	425
FFEN2320D	(659)	208/230 (60)	UL	NEMA 5-15				(1473 x 737 x 610)	(2012 x 945 x 711)	(193)
FFEN2320V		230 (50)	CE	European						
FFEN2320W‡		230 (50)	CE	U.K.						
FFEN3020A	29.2	115 (60)	UL	NEMA 5-15	upright	single	9 (45)	58.0 x 29.0 x 30.0	79.2 x 37.2 x 34.0	445
FFEN3020D	(826)	208/230 (60)	UL	NEMA 5-15				(1473 x 737 x 762)	(2012 x 945 x 864)	(197)
FFEN3020V		230 (50)	CE	European						
FFEN3020W‡		230 (50)	CE	U.K.						

► **Would you like to customize your enzyme freezer? See page 18 for options and accessories.**

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application.

‡ Due to differences in building wiring regulations in Australia and New Zealand, the current draw for the W-voltage units rated less than 10A may utilize a 10A circuit breaker. This rating only applies to Australia and New Zealand. Confirm the amperage rating on the data plate. Contact your local sales representative for more information.



Flammable Material Freezers

Our **Forma FMS high-performance manual defrost freezers** are designed to meet stringent US Pharmacopeia standards for drug storage as well as the NFPA safety provisions for the storage of flammable liquids.* Each model is listed by UL as a special purpose refrigerator or freezer intended for flammable material storage in accordance with NFPA 45, 70 and 99.* **Not available outside North America.**

- Ignition-free interior cabinet design
- Meets safety standards in accordance with UL, NFPA* and OSHA* for regulatory compliance
- Manual defrost
- Convenient access port and casters
- Optional, barrier-protected 4-20 milliamp output for external monitoring
- Optional, built-in, inkless, seven-day graphic chart recorder

* Products complying with the applicable requirements of NFPA 70, "National Electric Code"; NFPA 45, "Fire Protection for Laboratories Using Chemicals," and NFPA 99 "Health Care Facilities" are considered to meet the OSHA guidelines for these types of facilities. These units have no internal electrical components that could trigger an explosion or fire of flammable materials inside the unit. Flammable material storage units are not for use in classified hazardous locations which require the use of explosion-proof units.

Thermo Scientific Forma FMS High-Performance Freezers (Not Available Outside North America)

Temperature Range: -20°C

Model No.	Cu.Ft. (L)	Voltage (Hz)	Certification	Plug	Cabinet	Door	Shelves (Bins)	Int. Dimensions* H x D x W inches (mm)	Ext. Dimensions* H x D x W inches (mm)	Ship Weight lb (kg)
FFMS2320A	23 (651)	115 (60)	UL	NEMA 5-20	upright	single	4	58.0 x 29.0 x 24.0 (1473 x 737 x 610)	79.2 x 37.2 x 28.0 (2012 x 945 x 711)	425 (193)

► **Would you like to customize your flammable material freezer? See page 18 for options and accessories.**

* Published interior volumes are nominal; useable cu.ft. (L) capacities may be offset by shelves, drawers, blower coils, or cabinet protrusions. For specific cabinet dimensions and allowances, or for verification of clearance tolerances, contact our sales representative. Product performance may be affected by ambient temperature conditions, humidity conditions, sample loading preferences, and frequency of door openings. Contact our sales representative for specific inquiries regarding your application.

OPTIONS & ACCESSORIES



► **Shelves**



► **Wire Basket Drawers**



► **Enzyme Storage Bins**

Productive use of our high-performance refrigerators and freezers can be enhanced with options and accessories specifically designed to improve utility and convenience.

Many options are factory-installed and must be specified with your refrigerator and freezer order. Customer-installed options may require the services of a factory authorized technician. The ordering chart on the following page will inform you which options are factory- or customer-installed.

Before Ordering ...

Serial number tags on all of our refrigerators and freezers provide model numbers and voltage information needed for accurate selection of options ordered for field installation. You can also refer to the refrigerator and freezer ordering charts in this brochure for model numbers and voltage information. It is recommended that options be ordered when your refrigerator or freezer is ordered. Factory-installed options eliminate down-time during product installation.

Door Swing Options and Heated Glass Door Options (Factory-Installed)

All high-performance refrigerators and freezers are right-hand swing but factory-installed, left hand swings are available. To mitigate condensation, heated glass door options are also available. Not all options are available on all models: see the chart on the following page.

Temperature Chart Recorders (Factory- or Customer-Installed)

Standard on blood bank refrigerators and plasma freezers but optional on other models. Chart recorders are 6" (15.2 cm), seven-day and use pressure-sensitive chart paper. One box of 50 charts is included with order.

Surge Suppressors (Factory-Installed)

Designed to prevent issues related to voltage surges.

Remote Alarm Modules (Factory-Installed)

Free-standing remote alarm modules tie-in to the standard remote alarm terminals on the refrigerators and freezers.

OPTIONS & ACCESSORIES



Alarm Delay Modules

The alarm delay eliminates nuisance alarms due to intermittent or transitory conditions such as lightning or brief power outages. The adjustable delay requires an alarm condition to exist continuously for a pre-determined time (adjustable) before a signal is released to a central alarm/monitoring system or telephone dialer.

- Adjustable delay from 0.5 to 32 minutes
- Red alarm indicator light remains flashing after transient condition is corrected; requires manual reset
- Signals chronic alarm conditions which may indicate impending component failure; allows time for inspection of corrective maintenance
- Inserts variable time interval between detection of alarm condition and transmission of signal
- Includes accurate digital timing circuit adjustable from 0.5, 1, 2, 4, 8, 18 or 32 minutes
- Operates independent of the line power; built-in battery and alarm test function users customer supplied 9V battery

Digital Temperature Monitors

Simple, accurate and cost-effective, the digital temperature and power monitor provides both alarm/monitoring and digital temperature display in a single, self-contained unit. Standard features include high alarm, alarm mute and chirp, audio delay timer, remote alarm contacts (SPDT), NiCad battery backup and low voltage AC power supply. 120V, AC only.

- Can be installed on or adjacent to the refrigerator or freezer
- Activates an audible and visual warning in case of power failure or over-temperature condition
- Choose from single probe digital models or multiple probe, microprocessor-based models
- Temperature range is -100°C to 25°C
- Probe size 1.25" L x 0.25" diameter

4-20 milliamp (MA) transmitters

4-20 milliamp transmitters offer a point-to-point circuit to transmit signals from refrigerator and freezer sensors to a controller, sending an analog signal from 4 to 20 milliamps.

Specialty Electrical Plugs

For countries where NEMA 5-15, 6-15 and Continental EU plugs are not standard, specialty plug options are available. See the following page for these country-specific plugs.

Seismic Restraint Kits

Provides additional stability for regions prone to earthquakes.

e-Lock Adapter Kits

E-locks provide access control with audit-trail capabilities, as well as temperature monitoring. These kits require no electricity and are available in both factory- and customer-installed options for CompX™, Pyxis®, Omnicell® and McKesson™ locks.

CompX is a trademark of CompX International, Inc. Pyxis is a registered trademark of CareFusion Corporation. Omnicell is a registered trademark of Omnicell, Inc. McKesson is a trademark of McKesson Corporation.

Options for High-Performance Refrigerators Ordering Guide

For use with refrigerator size →	4.9 cu. ft. (133 L)	11.5 cu. ft. (326 L)	23.3 cu. ft. (659 L)	29.2 cu. ft. (826 L)	45.8 cu. ft. (1297 L)	51.1 cu. ft. (1447 L)	78.8 cu. ft. (2231 L)
Door options (factory-installed)	Model No.	Model No.	Model No.	Model No.	Model No.	Model No.	Model No.
Left hand swing, solid door	7119	6995	6997	6999			
Left hand swing, glass door	7123	6996	6998	7000			
Left hand swing, heated glass door		7073	7075	7087			
Right hand swing, glass door	7118	7066	7012	7013			
Right hand swing, heated glass door		7074	7086	7088			
Double left hand swinging doors, solid						7001	
Double left hand swinging doors, glass						7067	
Double left hand swinging doors, heated glass						7089	
Double right hand swinging doors, solid						7068	
Double right hand swinging doors, glass						7069	
Double right hand swinging doors, heated glass						7090	
Double left and right hand swinging doors, solid						7019	
Double left and right hand swinging doors, glass						7014	
Double left and right hand swinging doors, heated glass						7091	
6" 7-day inkless chart recorders, -40°C to +25°C	Model no. (all sizes)						
Free-standing, customer-installed, 115V, 60Hz models				6383-7A			
Free-standing, customer-installed, 208-230V, 60Hz models				6383-7D			
Free-standing, customer-installed, 230V, 50Hz models (EU)				6383-7V			
Free-standing, customer-installed, 230V, 50Hz models (UK)				6383-7W			
Factory-installed (all voltages)				6183-7			
Replacement chart paper, box of 50				6184			
Surge suppressor (factory-installed)							
115V, 60Hz models				6402-1			
208-230V, 60Hz models				6402-2			
230V, 50Hz models				6402-3			
Remote alarm modules (factory-installed)							
115V, 60Hz models				5612-1A			
208-230V, 60Hz models				5612-2D			
230V, 50Hz models				5612-3V			
Alarm delay modules							
Battery operated				6903			
Digital temperature monitors							
Single input channel, temperature range -100° to +25°C, set point resolution of 1°C, high temperature alarm only, numeric LCD display, red visual alarm, 8 ft. Teflon® lead wire, Velcro® mounting strap, 5" L x 2"D x 4.5"W (mm, 130 x 50 x 110), 120v, 60hz, with a 15amp dual prong plug (fits NEMA 5-15R)				6898			
Deluxe electronic remote alarm							
Requires a dedicated, analog phone line				6224TA			
4-20 milliamp transmitters							
Self-powered, factory-installed				7204			
Non-powered, factory-installed				6907-1			
Non-powered, customer-installed				6907-2			
e-Lock adapter kits (does not include locks; single door models only)							
CompX adapter, factory-installed				CXELAF			
CompX adapter, customer-installed				CXELAC			
Pyxis glass door adapter, factory-installed				PXELAGF			
Pyxis glass door adapter, customer-installed				PXELAGC			
Pyxis solid door adapter, factory-installed				PXELASF			
Pyxis solid door adapter, customer-installed				PXELASC			
Omnicell glass door adapter, factory-installed				OMELAGF			
Omnicell glass door adapter, customer-installed				OMELAGC			
Omnicell solid door adapter, factory-installed				OMELASF			
Omnicell solid door adapter, customer-installed				OMELASC			
McKesson glass door adapter, factory-installed				MKELAGF			
McKesson glass door adapter, customer-installed				MKELAGC			
McKesson solid door adapter, factory-installed				MKELASF			
McKesson solid door adapter, customer-installed				MKELASC			
Stainless steel interior (factory-installed)							
Stainless steel interior finish	7116	6199-3A	6115	6709	6711	6116	6117
5°C setpoint (factory-installed)							
Not available for blood bank or chromatography models			7508TA			7508TA	

Options for High-Performance Freezers Ordering Guide

For use with freezer size →	4.9 cu. ft. (133 L)	11.5 cu. ft. (326 L)	23.3 cu. ft. (659 L)	29.2 cu. ft. (826 L)	51.1 cu. ft. (1447 L)
Door options (factory-installed)	Model no.	Model no.	Model no.	Model no.	Model no.
Left hand swing, solid door	7119	6995	6997	6999	
Double left hand swinging doors, solid					7001
Double right hand swinging doors, solid					7068
Double left and right hand swinging doors, solid					7019
6" 7-day inkless chart recorders, -40°C to +25°C	Model no. (all sizes)				
Factory-installed (all voltages)			6183-7		
Free-standing, customer-installed, 115V, 60Hz models			6383-7A		
Free-standing, customer-installed, 208-230V, 60Hz models			6383-7D		
Free-standing, customer-installed, 230V, 50Hz models (EU)			6383-7V		
Free-standing, customer-installed, 230V, 50Hz models (UK)			6383-7W		
Replacement chart paper, box of 50			6184		
Surge suppressor (factory-installed)					
115V, 60Hz models			6402-1		
208-230V, 60Hz models			6402-2		
230V, 50Hz models			6402-3		
Remote alarm modules (factory-installed)					
115V, 60Hz models			5612-1A		
208-230V, 60Hz models			5612-2D		
230V, 50Hz models			5612-3V		
Alarm delay modules					
Battery operated			6903		
Digital temperature monitors					
Single input channel, temperature range -100° to +25°C, set point resolution of 1°C, high temperature alarm only, numeric LCD display, red visual alarm, 8 ft. Teflon® lead wire, Velcro® mounting strap, 5" L x 2"D x 4.5"W (mm, 130 x 50 x 110), 120v, 60Hz, with a 15amp dual prong plug (fits NEMA 5-15R)			6898		
Deluxe electronic remote alarm					
Requires a dedicated, analog phone line			6224TA		
4-20 milliamp transmitters					
Self-powered, factory-installed			7205TA		
Non-powered, factory-installed			4706		
e-Lock adapter kits (does not include locks)					
CompX adapter, factory-installed			CXELAF		
CompX adapter, customer-installed			CXELAC		
Pyxis solid door adapter, factory-installed			PXELASF		
Pyxis solid door adapter, customer-installed			PXELASC		
Omnicell solid door adapter, factory-installed			OMELASF		
Omnicell solid door adapter, customer-installed			OMELASC		
McKesson solid door adapter, factory-installed			MKELASF		
McKesson solid door adapter, customer-installed			MKELASC		
Stainless steel interior (factory-installed)	Model no.	Model no.	Model no.	Model no.	Model no.
Not available on -20°C models	7116	6199-3A	6115	6709	6116

Specialty Plugs for Refrigerators and Freezers

Specialty plugs (factory-installed) for all Models									
Argentina	Australia	Brazil	China	Denmark	India	Israel	Italy	Switzerland	Twist lock plug NEMA L6-15P
AR230V16A	AU230V16A	BR230V16A	CH230V16A	DK230V16A	IN230V16A	IS230V16A	IT230V16A	SW230V16A	TL230V15A

Accessories for High-Performance Refrigerators and Freezers

For use with refrigerator or freezer size →	4.9 cu. ft. (133 L)	11.5 cu. ft. (326 L)	23.3 cu. ft. (659 L)	29.2 cu. ft. (826 L)	45.8 cu. ft. (1297 L)	51.1 cu. ft. (1447 L)	78.8 cu. ft. (2231 L)
Shelves	Model no.	Model no.	Model no.	Model no.	Model no.	Model no.	Model no.
Epoxy-coated, full size shelf		7125	6696	6695		6696	
Epoxy-coated, half size shelf			6698	6697		6698	
Stainless steel, full size shelf	6202-1	6695-1	6696-1				
Drawer dividers for roll-out, stainless steel drawers							
4-place divider, order one divider per drawer		7027 (4)	6206 (4)	6963 (5)			6206 (4)
3" casters (note: all models ship standard with 2")							
Set of four, 3" (76mm) casters			6041-1		6694		6041-1
Additional wire basket drawers							
For pharmacy refrigerators		WB12	WB23/50	WB30		WB23/50	
Enzyme bins							
Labels not included				6736		6736	
Thermo Scientific Lab Cooler Module							
Holds twenty-four 1.5mL tubes and eight 0.5mL tubes					6744		
Seismic restraint kits							
Basic					TFR210		
For OSHPD		TF-LRF12	TF-LRF23	TF-LRF30	TF-LRF45	TF-LRF50	TF-LRF75

ADDITIONAL ACCESSORIES



► Gibco Media

Gibco™ media, sera, supplements, cells and cell culture reagents are designed to deliver reproducibility and performance for results you can count on. Regardless of whether you are performing cell culture in a research lab or production facility, need a special or defined formulation, or are growing cell lines, primary cells, or stem cells, Gibco products offer a reliable solution.



► Clinical Containers

Made with the highest quality resins, Thermo Scientific Nalgene™ bottles are engineered to work harder with a proprietary valve seal and a strong, semi-buttress thread design. Our Nalgene bottles offer a leakproof* guarantee because we manufacture and test both components together as part of our routine quality program.



► Cold Chain Monitoring

Thermo Scientific Smart-Tracker™ offers special features for mobile temperature tracking and data sharing via the Cloud. Place Smart-Tracker inside a crate or package and use the app to check it at different location. Each time you read Smart-Tracker, the data, complete with geo-location information from your smartphone can be uploaded to the Cloud and accessed from anywhere in the world.

*Our guarantee for a leakproof seal is subject to our standard product warranty, as set forth in the Thermo Fisher Scientific Terms and Conditions of Sale. Our products are leakproof at ambient temperature and pressure when used with their corresponding closures. However, to ensure safe usage, customers are advised to test our containers and closures under conditions of their planned applications. Please contact technicalsupport@thermofisher.com if you need additional information about our products.

Electrical Information

Thermo Scientific Forma high-performance refrigerators and freezers are designed to meet UL and CE criteria for safety and performance. See ordering charts for certifications per specific voltages. All connections must comply with local electrical codes.

- Selection charts for each standard model list voltage, rated amperage, recommended circuit breaker size, and NEMA (National Electrical Manufacturers' Association, USA) electrical plug information
- Most refrigerators and freezers are supplied with line cord plugs, which require corresponding receptacles illustrated on the line cord plug reference chart to the right
- Site preparation requires availability of the proper receptacle; a dedicated circuit is required
- Special voltage selections may be available at extra cost and must be specified when ordering
- For questions regarding site preparation, installation and electrical connection, contact your sales representative

Certification of Calibration

Control, alarm and temperature recording systems are systematically calibrated at the factory for accurate performance. An optional Certificate of Calibration to an NIST (National Institute of Standards and Technology, formerly National Bureau of Standards) traceable instrument includes a Model Number and Serial Number Certificate (single point calibration). Multiple point calibration is also available. Calibration certificates must be requested when ordering; for details contact your sales representative.















Validation Testing Program

Validation testing services in advance of shipment can accelerate in-house FDA Installation Qualification (IQ) and Operation Qualification (OQ) programs. Validation services include documentation and performance reports, compressor and subsystem component specifications, microprocessor flow diagrams, software specifications and more. For more details, contact your sales representative.

Model No.	Services Description
7455TA	Temperature mapping of 24 hours at setpoint to include: <ul style="list-style-type: none"> • Mapping data graphed at each location • Thermocouple placement diagram • Test equipment list • Average uniformity and stability at specified cycle • Minimum, average and maximum temperatures at each thermocouple location • Uniformity and stability at each location
7456TA	Temperature mapping of 24 hours (traceable instruments and raw data) at setpoint to include: <ul style="list-style-type: none"> • Mapping data graphed at each location • Thermocouple placement diagram • Test equipment list utilizing Kaye Validator® thermal validation equipment • Calibration certificates of test equipment • Thermocouple calibration reports • Average uniformity and stability at specified cycle • Minimum, average and maximum temperatures at each thermocouple location • Uniformity and stability at each location
6916-2	Certificate of calibration at the time of sale
6916-7	Certificate of calibration, post-shipment

Standard Plug Option Configurations

Choose one of our specialty plugs to configure your freezer to meet local requirements

Model No.	Plug Description	Male End
Standard Plugs		
US125V20A	NEMA 5-20	
US230V15A	NEMA 6-15	
EU230V16A	Continental EU	
Specialty Plugs		
IT230V16A	Italy	
UK230V13A	Great Britain	
IN230V16A	India	
IS230V16A	Israel	
AU230V16A	Australia	
AU230V10A	Australia	
CH230V16A	China	
DK230V16A	Denmark	
AR230V16A	Argentina	
SW230V16A	Switzerland	
BR230V16A	Brazil	

Refrigerators and freezers supplied with line cord plugs (P) require corresponding receptacles illustrated in the Line Cord Plug Reference. Catalog selection charts list each standard model with voltage, rated amperage, recommended circuit breaker size and NEMA electrical plug information.

Thermo Scientific Smart-Vue

with so much at stake,
obsessive is smart

The Thermo Scientific™ Smart-Vue™ wireless monitoring solution safeguards the integrity of precious samples by continuously monitoring critical parameters of laboratory equipment and securely logging data to give you peace-of-mind. This wireless solution features audit trail traceability to assist with conformance to 21 CFR part 11, and other regulatory requirements.

Smart

Continuous, real-time monitoring of critical parameters – alerting you remotely when sample integrity is threatened

Scalable

Flexibility to grow with your expanding laboratory needs

Simple

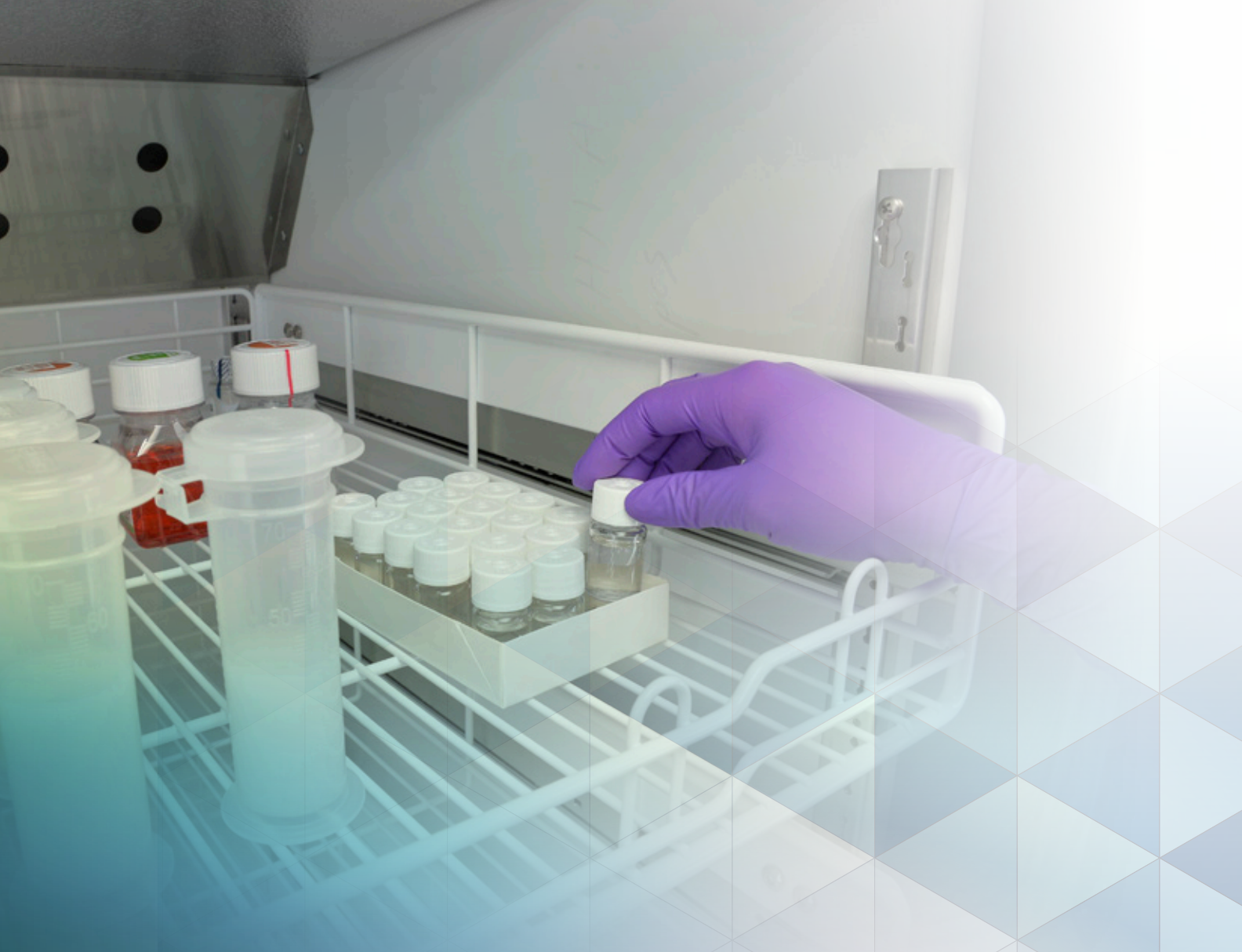
Easy to install, use and maintain



For more information, contact your sales representative. Smart-Vue is not available in all Radio Frequency (RF) regions.

Note: Smart-Vue wireless monitoring kits are designed for first time users monitoring critical temperature parameters in ultra-low temperature freezers. Smart-Vue modules and sensors are available for temperature, RH, CO₂ concentration, differential pressure, 4-20mA output, ambient conditions and alarm/relay dry contacts. Solutions vary by RF regions worldwide and are compatible with multiple types of laboratory equipment. Please ask your sales representative to evaluate a Smart-Vue wireless monitoring solution that best meets your specific needs.





Learn more at thermofisher.com/cold

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