

Isotemp™



-86°C Freezers



Isotemp™ Ultra-Low Temperature Freezers

Safeguard your precious samples with advanced technology and exceptional quality



Model Shown: 17 cu. ft. (489L),
Cat. No. IU1786.

Robust Cabinet Design:
Constructed of high-strength steel with a corrosion-resistant coating for long-life durability

Cabinet Insulation:
Minimum 5" (127mm) CFC-free, foamed-in-place insulation for thermal protection and structural strength

Stand-Offs:
Prevents freezer from being placed directly against the wall, ensuring proper air circulation to prevent over-heating

Access Port:
1" (25mm) diameter for easy access through wall

Remote Alarm Contacts:
Allows physical connection to external alarm/monitoring system providing alert capability if samples are at risk

Heavy-Duty Casters:
2" (51mm) locking, tandem wheel design for easy, smooth mobility



Secure Inner Doors:
Five inner doors reduce air loss during door opening

Outer Door Gasket:
Triple-point gasket protects against heat leaks and minimizes frost build-up

Robust, High-Quality Construction:
Foam insulation, flexible storage and precision controls

Stainless-Steel Interior Shelves:
Reinforced shelves, designed for excessive loads and impacts

Isotemp ultra-low temperature freezers combine the highest reliability and performance with cost-effective operation and innovative features. These freezers feature an advanced technology platform, refrigeration, microprocessor controls and high-quality construction, delivering:

- » Maximum Temperature Recovery
- » Operational Efficiency
- » Comfortable Lab Environment
- » Environmentally-Friendly

Innovative Features and Rewarding Benefits

Features	Advantages	Benefit
Refrigeration System	Maintains cold temperature in the presence of high heat loads Low power consumption Low heat emission	Quicker recovery after door openings, ensuring sample protection Cost-of-ownership is lower; environmentally-friendly Less energy and HVAC equipment required A quieter freezer allows the unit to be placed directly in the lab
Microprocessor Control On-Board Diagnostics	Setpoint controls for temperature and alarm system Reports error codes, pointing researcher to a probable cause	More precise settings and flexibility for temperature setpoints Diagnose problems faster; lower down-time and sample exposure
Automatic Voltage Buck/Boost	Buck will reduce incoming line voltage in the event voltage is too high Boost will provide additional voltage to incoming line if voltage is too low	Adds to the longevity of the freezer by stabilizing the voltage to the unit
Optional Integrated Back-Up	Integrated LN ₂ or CO ₂ back-up system is programmable at the user interface	Assurance that samples will not be compromised if power outage occurs
Recessed Power Switch	Recessed into the housing to keep the unit from inadvertently switching off	Controls down time due to accidentally switching off power supply
Reinforced Shelves	Stiffeners are added to stainless-steel shelves for excessive loads and impacts	Store high-load and non-standard samples such as microplate hotels
Door-Mounted Pressure Equalization Port (PEP)	Door-mounted PEP does not take up valuable storage space or require maintenance	Periodic ice removal from PEP isn't required

Isotemp™ Ultra-Low Temperature Upright Freezers



Model Shown: 23 cu. ft. (651L),
Cat. No. IU2386.

- » **Easy to use control system:** touch-pad data entry and digital display of all functions
- » **Voltage buck/boost:** protective device used to correct low or high voltage into the unit; protects and extends the life of electrical components
- » **Standard RS-232 and 4-20mA analog outputs** provide temperature data to independent monitoring devices
- » **Battery backup:** continuous charge provides full function to control panel in case of power failure
- » **On-board diagnostics:** continuously monitors sensors to ensure proper performance
- » **Compressor protection:** monitors performance and automatically adjusts to internal and external conditions, extending compressor life, further protecting precious samples
- » **Centralized information management center** simplifies operation and provides setpoint security option

Isotemp control panel

Audible/Visual Alarms

Low Battery and Hot Condenser Indicators

Temperature: Displays actual and sample probe (optional) temperatures

Configuration: Configure access code, serial output, temperature alarm test and system battery test

Calibrate: Calibrate control, probe temperature and sample probe temperature (optional)

Mode: Select run, settings, calibrate or configuration

Message Center: 12-character alphanumeric LED displays setpoints, "SYSTEM OK" during operation and other messages

Settings: Set cabinet temperature, setpoint, over and undertemp alarm, back-up system temperature (optional)



Isotemp power management systems featuring optional CO₂ or LN₂ back-up and optional 7-day, 6" chart recorder

Isotemp™ Ultra-Low Temperature Chest Freezers

- » Easy to use controls
- » Standard RS-232, dry contacts and 4-20 milliamp analog output. The 4-20 milliamp output is a common analog output used to provide temperature data to independent monitoring devices and recorders
- » Highly visible display, intuitive controls and simplified programming for easy setup, programming and to check and monitor parameters and conditions

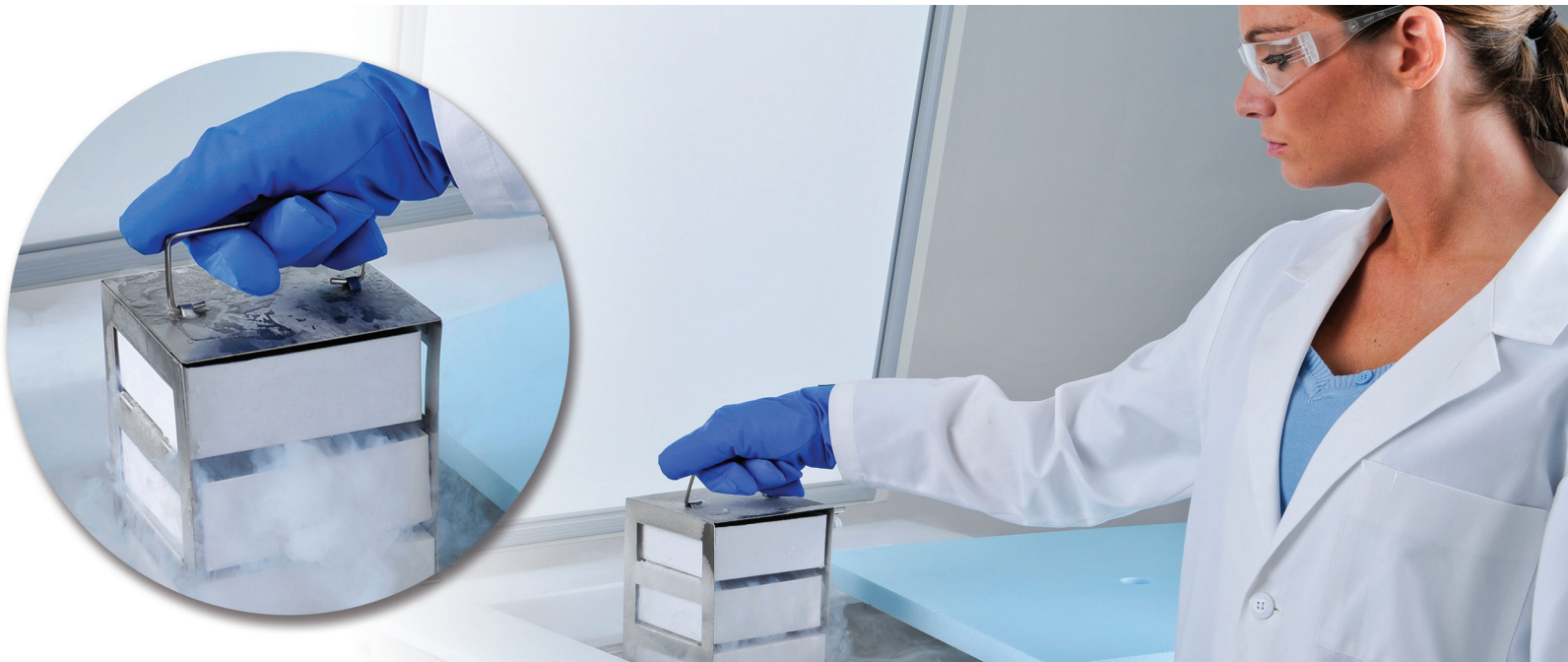


Model Shown: 20 cu. ft. (566.3L), Model I920C



Model Shown: 3 cu. ft. (85L), Model I903C, shown with optional back-up system

- » Numerous audible/visual alarms as well as high/low alarm test, offering peace of mind monitoring for sample protection
- » Easy to clean, stainless-steel interior
- » Robust cabinet design constructed of high-strength steel with corrosion-resistant coating for long-life durability
- » Convenient, hinged air filter grill allows for easy access for inspection, cleaning and/or changing
- » Optional seven-day, 6" (152mm) circular chart recorder for validation and regulatory requirements
- » **Voltage buck/boost:** protective device used to correct low or high voltage into the unit; protects and extends the life of electrical components
- » Four sizes to meet your lab and application space requirements
- » 1" (25mm) diameter access port for easy access through freezer wall



Isotemp™ Ultra-Low Temperature Freezers

Specifications and Ordering Information



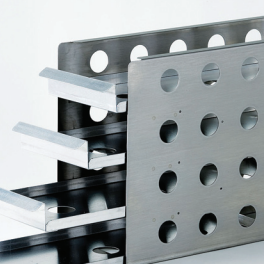
Isotemp Ultra-Low Temperature Upright Freezers (Temperature Range: -50°C to -86°C)

Cat. No.	Capacity cu. ft. (L)	Electrical	Amps/Breaker (Plug)	Interior Dimensions H x W x D in. (cm)	Exterior Dimensions H x W x D in. (cm)	Shipping Weight lbs. (kg)
IU1386A	13.0 (368.1)	115V 60Hz	16/20 (NEMA 5-20)	51.5 x 22.5 x 19.4 (130.8 x 57.2 x 49.2)	77.9 x 33.3 x 32.9 (197.9 x 84.6 x 83.6)	696 (316)
IU1386D		208-230V 60Hz	12/15 (NEMA 6-15)			
IU1386V		230V 50Hz	12/16 (European)			
IU1786A	17.3 (489.9)	115V 60Hz	16/20 (NEMA 5-20)	51.5 x 22.5 x 25.4 (130.8 x 64.3 x 58.4)	77.9 x 33.3 x 38.9 (197.9 x 84.6 x 94.0)	795 (361)
IU1786D		208-230V 60Hz	12/15 (NEMA 6-15)			
IU1786V		230V 50Hz	12/16 (European)			
IU2386A	23.0 (651.3)	115V 60Hz	16/20 (NEMA 5-20)	51.5 x 30.0 x 25.4 (130.8 x 76.2 x 64.5)	77.9 x 40.8 x 38.9 (197.9 x 103.6 x 94.0)	839 (381)
IU2386D		208-230V 60Hz	12/15 (NEMA 6-15)			
IU2386V		230V 50Hz	12/16 (European)			
IU2886D	28.0 (651.3)	208-230V 60Hz	16/20 (NEMA 6-15)	51.5 x 36.0 x 26.5 (130.8 x 91.4 x 67.3)	77.9 x 46.8 x 38.9 (197.9 x 118.9 x 94.0)	1060 (494)
IU2886V		230V 50Hz	12/15 (European)			

Isotemp Ultra-Low Temperature Chest Freezers (Temperature Range: -50°C to -86°C)

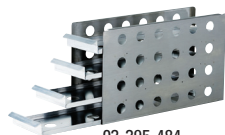
I903CA	3.0 (84.9)	115V 60Hz	6/15 (NEMA 15)	16.5 x 18.5 x 18.5 (41.9 x 47.0 x 47.0)	43.8 x 28.5 x 29.9 (111.3 x 72.4 x 75.9)	432 (196)
I903CV		230V 50Hz	5.4/15 (European)			
I913CA	12.7 (359.6)	120V 60Hz	16/20 (NEMA 5-20)	27.8 x 42.4 x 18.5 (70.6 x 107.7 x 47.0)	40.5 x 72.0 x 33.4 (102.9 x 182.9 x 84.8)	716 (325)
I913CD		208-230V 60Hz	12/15 (NEMA 6-15)			
I913CV		230V 50Hz	12/15 (European)			
I917CA	17.0 (481.4)	120V 60Hz	16/20 (NEMA 5-20)	28.0 x 58.8 x 18.5 (71.1 x 149.4 x 47.0)	40.5 x 87.6 x 33.8 (102.9 x 222.5 x 85.9)	821 (372)
I917CD		208-230V 60Hz	12/15 (NEMA 6-15)			
I917CV		230V 50Hz	12/15 (European)			
I920CA	20.0 (566.3)	120V 60Hz	16/20 (NEMA 5-20)	28.0 x 66.5 x 18.5 (71.1 x 168.9 x 47.0)	40.5 x 96.0 x 33.4 (102.9 x 243.8 x 84.8)	833 (378)
I920CD		208-230V 60Hz	12/15 (NEMA 6-15)			
I920CV		230V 50Hz	12/15 (European)			



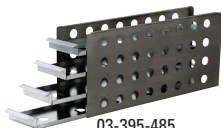


Isotemp™ Ultra-Low Temperature Freezer Racks

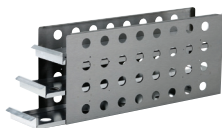
Ordering Information



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03-395-485



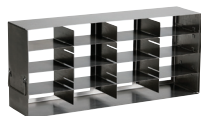
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13-990-475



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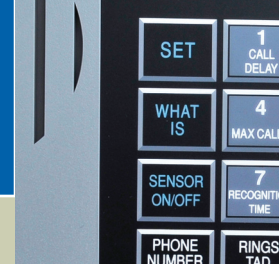
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Maximize Sample Protection with Fisherbrand Freezer Racks

Cat. No.	Description W x H x D in. (mm)	Freezer, Vol. cu. ft. (L)	Quantity of 2" Boxes	Quantity of 3" Boxes	Racks/ Shelf	Racks/ Freezer
03-395-484	Sliding drawer rack for 2" boxes 5.5 x 9.4 x 16.6 (140 x 239 x 422)	Upright, 13.0 (368)	12		4	20
03-395-485	Sliding drawer rack for 2" boxes 5.5 x 9.4 x 22 (140 x 239 x 559)	Upright, 17.3 (490)	16		4	20
		Upright, 23.0 (651)	16		5	25
		Upright, 28.8 (815)	16		6	30
03-395-472	Sliding drawer rack for 3" boxes 5.5 x 9.4 x 22 (140 x 239 x 559)	Upright, 17.3 (490)		12	4	20
		Upright, 23.0 (651)		12	5	25
		Upright, 28.8 (815)		12	6	30
03-395-493	Adjustable side access rack for 2" boxes 5.4 x 9.4 x 16.1 (137 x 239 x 409)	Upright, 13.0 (368)	12	9	4	20
		Upright, 17.3 (490)	16	12	4	20
		Upright, 23.0 (651)	16	12	5	25
03-395-488	Adjustable side access rack for 2" boxes 5.4 x 9.4 x 22.1 (137 x 239 x 561)	Upright, 28.8 (815)	16	12	6	30
		Upright, 17.3 (490)		12	4	20
		Upright, 23.0 (651)		12	5	25
03-395-494	Side access rack for 3" boxes 5.4 x 9.4 x 22.1 (137 x 239 x 561)	Upright, 28.8 (815)		12	6	30
		Upright, 17.3 (490)		12	4	20
		Upright, 23.0 (651)		12	5	25
398184	2" box chest freezer rack 5.5 x 16 x 5.5 (140 x 406 x 140)	Chest, 3 (85)	7			9
398185	3" box chest freezer rack 5.5 x 16 x 5.5 (140 x 406 x 140)	Chest, 3 (85)		5		9
398186	2" box chest freezer rack 5.5 x 26.5 x 5.5 (140 x 673 x 140)	Chest 12.7 (360)	12			21
		Chest 17 (481)	12			29
		Chest 20 (566)	12			33
398187	3" box chest freezer rack 5.5 x 26.5 x 5.5 (140 x 673 x 140)	Chest 12.7 (360)		8		21
		Chest 17 (481)		8		29
		Chest 20 (566)		8		33

Cat. No.	Description W x H x D" (mm)	Freezer, Vol. cu. ft. (L)	Microplates with lids	Microplates without lids	Deep-well Boxes	Racks/ Shelf/ Freezer
03-395-473	Microplate/deepwell rack with lock rod 5.5 x 9.4 x 22 (140 x 239 x 559)	Upright, 17.3 (490)	84	96	30	4, 20
		Upright, 23.0 (651)	84	96	30	5, 25
		Upright, 28.8 (815)	84	96	30	6, 30
398188	27 position microplate chest rack 5.3 x 25.8 x 3.6 (135 x 655 x 91)	Chest 12.7 (360)				33/ freezer
		Chest 17 (481)				48/ freezer
		Chest 20 (566)				51/ freezer

Optional Accessories for Isotemp™ Chest Ultra-Low Temperature Freezers



Backup Systems

Description	Cat. No. (Factory Installed)	Cat. No. (Field Installed)
CO₂ Backup System Maintains temperature down to -70°C with CO ₂	1950526	1950527
LN₂ Backup System Maintains temperature down to -85°C with liquid nitrogen	1950528	1950530

Chart Recorders

Description		Cat. No. (Factory Installed)	Cat. No. (Field Installed)
Ink Chart Recorder 6" (150mm) Seven day inkless recorder, to -150°C; includes red felt tip pen and one box of chart paper (qty. 50)	Upright	201240	201241
	3 CF Chest	13991005	13991004
	12, 17, 20 CF Chest	13991007	13991006
Ink Chart Paper (Pack of 50)			17020
Red Felt Tip Chart Pen			245231
Blue Felt Tip Chart Pen			245232

Data Outputs for Isotemp Basic Upright Freezers

Description	Cat. No.
RS-232, 0-1V	11676200
RS-232, 0-5V	11676201
RS-485, 4-20ma	11676202
RS-485, 0-1V	11676203
RS-485, 0-5V	11676204

Monitoring and Remote Alarms

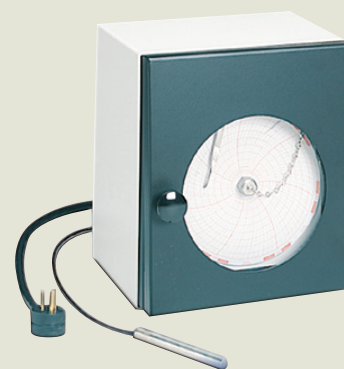
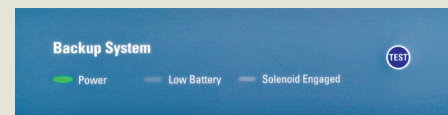
Description		Cat. No.
Remote Alarm with Audible Signal Extends the freezers on-board alarms systems to remote locations in the facility; comes with audible alarm silence switch and alarm ringback feature	120V 60Hz	400011
Sensaphone™ Telephone Dialing System Monitors up to four channels; dials up to four numbers (not CE); dedicated phone line is required	120V 60Hz	400047
	220V 50Hz	400182
Sensaphone™ Telephone Dialing System 120V 60Hz; Monitors up to eight channels; dials up to eight numbers (not CE); dedicated phone line is required	120V 60Hz	400134
	220V 50Hz	400183
Temperature/Power Monitor External digital and audible/visual alarms monitor temperature and power supply of the freezer; includes temperature probe	120V 60Hz	400048
	220V 50Hz	400049

Shelf Kit

Description		Cat. No.
Shelf Kit Contains shelf and clips	13 CF	890013
	17 CF	890017
	23 CF	890023
	28 CF	890028

Air Filters and Batteries









Description		Cat. No.
Replacement Air Filters (Pack of five filters)	Upright	11676216
	3 CF Chest	11676217
	12, 17, 20 CF Chest	11676218
Replacement Back-Up Battery		400159



Isotemp™

-86°C Freezers

Line Cord Plug Reference

Models With This Plug	Require This Receptacle	NEMA Reference	
		Plug	Receptacle
		6-15P	6-15R
		5-15P	5-15R
		5-20P	5-20R
		European	

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

The standard factory warranty on Isotemp -86°C freezers is two years parts and labor.

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