

Thermo Scientific Dual-Safe -80°C Chest Freezers

Combines high-capacity storage, more than twice the cooling capacity of our standard chest freezers with the ultimate in sample protection through redundant compressor systems.



Control system features a digital temperature display, 6" circular chart recorder, independent refrigeration controls, a keyed master switch and indicator lights for all control and operational functions.

The Thermo Scientific™ Dual-Safe -80°C chest freezer with its dual cooling system was developed for demanding military applications where the loss of samples is not an option. Unlike other chest freezers, should one compressor system fail, the other will maintain the operating temperature at -80°C. In addition to sample protection, the Dual-Safe features a powerful refrigeration system for the cooling of high-value samples.

The Dual-Safe features large storage capacity (over 32 cu. ft.), high cooling capacity (more than twice our standard chest freezers) and redundancy (two independent refrigeration systems) for critical samples.

General Performance Features

- Two independent cascade refrigeration systems configured to deliver reserve refrigeration capacity under extreme conditions
- Four (1.5) HP air-cooled (water-cooled optional) compressors for high capacity and maximum reliability
- Three modes of operation, including normal and accelerated pull-down, plus long-term storage
- Redundant controls in case of controller failure

Control System

- Keyed master power switch for operating security
- Independent refrigeration controls selectable for systems "A" and "B"
- Adjustable, integrated temperature control
- Toggle between display setpoint, actual operating temperature and alarm limits
- Independent adjustable cold and warm alarm setpoints with key activated switch, audible warning and alarm silence options
- Power failure alarm with battery back-up
- Indicator lights for all control and operational functions
- Standard 6" circular chart recorder for permanent record of cabinet performance
- Battery meter allows for easy check of backup charge

Cabinet Design

- Uses standard ultra-low temperature inventory racks with boxes
- Coved corner interior design improves refrigeration efficiency and accelerates heat removal from stored product
- Laboratory grade construction includes minimum 5" (12.7 cm) CFC-free foamed-in-place urethane insulation surrounding interior chamber, plus 3" (8.9 cm) insulation in lid
- Fully insulated lid has two cam action latches which compress against multi-seal gasket to protect against frost build-up

- High density sub-lids provide additional protection to stored product during lid openings
- Heavy-gauge, reinforced, cold-rolled steel interior chamber has 50% greater thermal efficiency than stainless steel
- Exterior and interior surfaces are finished with high impact powder coat paint
- Includes 1" diameter thru-wall access port with plug
- CE and UL approved

Refrigeration System

- Two independent cascade systems capable of operating separately or together depending on system loading
- Thermal expansion valve increases BTU removal capacity, increases temperature pulldown rate, improves temperature recovery following lid openings and warm product insertion, and automatically reacts to changing ambient temperatures
- Gravity feed evaporator design assures temperature uniformity within chamber interior, enhances refrigerant flow and oil return, and increases overall efficiency
- CFC-free refrigerants

Thermo Scientific Dual-Safe -80°C Ultra-Low Temperature Chest Freezers

Model No.	Storage Capacity cu. ft. (L)	Box Capacity	Chamber Temperature Range	Electrical Specification	Coolant	Exterior Dimensions W x F-B x H in. (cm)	Interior Dimensions W x F-B x H in. (cm)	Shipping Weight lbs. (kg)
MBF700LSAO-E	32 (929)	2" Box: 576	-65°C to -80°C (-85°F to -112°F)	220V, 60 Hz 60 Hz: 24 Amps/30 Amp breaker†	air	121 x 35.3 x 47.5 (307.3 x 89.0 x 120.6)	71 x 22.6 x 35.4 (180.3 x 57.4 x 89.8)	1790 (811.8)
MBF700LSAW-E		3" Box: 384			air/water			

† Breaker rating is subject to local electrical codes.

Optional Back-Up Systems*

Model No.	Voltage
C02 Back-Up System, Customer Installed* (Specify When Ordering)	
6593-1	115V, 60Hz
6593-2	208-230V, 60Hz
6593-5	230V, 50Hz
LN2 Back-Up System, Customer Installed* (Specify When Ordering)	
6214-1	115V, 60Hz
6214-8	208-230V, 60Hz
6214-13	230V, 50Hz

Optional Freezer Racks

Model No.	Description
398186	Stainless steel rack with handle, holds twelve 2" boxes
398184	Stainless steel rack with handle, holds eight 3" boxes

* Must be installed by a qualified professional.

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Australia +61 39757 4300
Austria +43 1 801 40 0
Belgium +32 53 73 42 41
China +86 21 6865 4588 or
+86 10 8419 3588
France +33 2 2803 2180
Germany national toll-free 0800 1 536 376
Germany international +49 6184 90 6000

India toll free 1800 22 8374
India +91 22 6716 2200
Italy +39 02 95059552
Japan +81 45 453 9220
Netherlands +31 76 579 55 55
New Zealand +64 9 980 6700
Nordic/Baltic/CIS Countries
+358 9 329 10200

Russia +7 812 703 42 15
Spain/Portugal +34 93 223 09 18
Switzerland +41 44 454 12 22
UK/Ireland +44 870 609 9203
USA/Canada +1 866 984 3766 (866-9-THERMO)

Other Asian Countries +852 2885 4613
Countries not listed: +49 6184 90 6000

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