



MDF-DU302VX-PA | 21A00B265

## TwinGuard®

-86°C Ultra-Low Temperature Upright Freezer

12.7 cu.ft. | 360 L



The patented TwinGuard -86°C upright freezer is powered by a unique concept of two auto-cascade cooling circuits that work together, both independently and concurrently, to provide continuity in stored product protection over a range of real world conditions. The slim profile design permits installation in small spaces.

### Ultimate Sample Protection

The dual cooling system offers the highest level of sample protection through the use of two independent refrigeration systems that maintain -86°C temperature. Should a service event occur, temperatures will hold at -80°C\*. The two circuits work together for fast temperature recovery.

\* Refer to the user manual for detailed performance information and specifications

### Valuable Sample Storage

With two complementary refrigeration systems, each capable of sustaining ultra-low temperatures, the TwinGuard design expands the circle of protection for maximum safety of stored product. Optional CO<sub>2</sub> back-up systems maintain a margin of safety for short-term operation in case of a power loss.

### Efficient Space Management

This freezer is ideal for personal use where shared, remote or off-site storage of critical samples is not desirable. It requires less space than a standard ultra-low temperature freezer, yet holds up to 240 standard 2" storage boxes in only 6.36 sq.ft. (0.6m<sup>3</sup>) of floor space.



#### EZlatch

EZlatch is the centerpiece of a holistic inventory access and frost mitigation system. The simplified, one-handed, comfortable operation keeps TwinGuard upright freezers operating at maximum energy efficiency.



#### Security and Control Monitoring

An eye-level, door mounted color LCD touchscreen allows full user control while the USB port makes transferring logged data to a PC convenient. All performance attributes are displayed and an internal time/temperature log is expressed in graphic form.



#### Predictive Performance

The freezer is managed by a microprocessor digital controller. Data is continuously collected throughout the system to predict any deviations from expected performance, which would in turn initiate alarms with audible and visual alerts.

# TwinGuard® -86°C ULT Upright Freezer

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The outer door gasket is easily removed and replaced without tools while the freezer remains in operation.

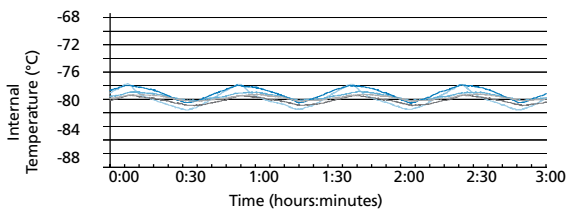
Model MDF-DU302VX-PA | 21A00B265 shows inner door and shelf layout

## Improved Temperature Performance

The TwinGuard -86°C upright freezer design provides optimal temperature stability and uniformity. During routine door openings, the insulated inner doors minimize the loss of cold air even when the outer door is open.

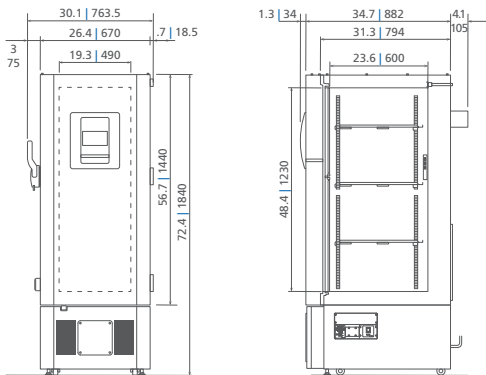
## Temperature Uniformity Data:

-80°C setpoint at 23°C ambient temperature, empty freezer



## Dimensions

Unit : inch | mm



Specifications are subject to change without notice.

Performance data herein is based on independent testing at time of publication.

| Model Number   |                    | MDF-DU302VX-PA   21A00B265  |
|--|--------------------|---|
| External Dimensions (W x D x H) <sup>1)</sup>                    | inches   mm        | 26.4 x 34.7 x 72.4   670 x 882 x 1840                                     |
| Internal Dimensions (W x D x H)                                  | inches   mm        | 19.3 x 23.6 x 48.4   490 x 600 x 1230                                     |
| Volume   | cu.ft.   liters    | 12.7   360  |
| Net Weight   | lbs   kg           | 496   225   |
| Capacity (2" boxes)  | qty                | 240   |
| Capacity (3" boxes)  | qty                | 144   |
| Inventory Racks (2" boxes)                                       | qty                | 12  |
| Inventory Racks (3" boxes)                                       | qty                | 12  |
| Performance  |                    |   |
| Warranty <sup>2)</sup>   |                    | 5 years parts and labor   |
| Cooling Performance <sup>3)</sup>                                | °C                 | -86   |
| Temperature Setting Range <sup>3)</sup>                          | °C                 | -50 to -90 in 1° increments   |
| Temperature Control Range <sup>3)</sup>                          | °C                 | -50 to -86 in 1° increments   |
| Cooling Performance <sup>3)</sup> Service Event (System A or B)* | °C                 | -80   |
| Control  |                    |   |
| Controller   |                    | Microprocessor, touchscreen data entry, password protected                |
| Display  |                    | LCD color touchscreen   |
| Temperature Sensor   |                    | Pt-1000   |
| Refrigeration  |                    |   |
| Refrigeration System   | qty                | 2 (auto-cascade)  |
| Compressors  | W                  | (2) 450   |
| Refrigerant  |                    | Mixed HC/HFC blended  |
| Insulation Thickness, Material                                   | inches   mm        | 3.1   80, foamed-in-place + VIP Plus vacuum insulated panels              |
| Construction   |                    |   |
| Exterior Material  |                    | Painted steel   |
| Interior Material  |                    | Painted steel   |
| Outer Door   | qty                | 1 (key lock with provision for optional pad lock)                         |
| Inner Doors  | qty                | 2 (insulated ABS, stainless steel frames, positive latches)               |
| Shelves  | qty                | 3 (adjustable)  |
| Shelf Dimensions (W x D)   | inches   mm        | 18.7 x 20.9   475 x 531   |
| Max. Load per Shelf  | lbs   kg           | 110   50  |
| Vacuum Release Port  | qty                | 2: in door (automatic release) and side wall, lower left (manual release) |
| Access Ports   | qty                | 3   |
| Access Port Diameter   | inches   mm        | 0.6   17  |
| Casters  | qty                | 4 (2 leveling feet on front base)   |
| Alarms (V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)    |                    |   |
| Power Failure  |                    | V-B-R   |
| Temperature (High and Low)                                       |                    | V-B-R   |
| Sensor Failure   |                    | V-B-R   |
| Cooling Circuit Abnormality                                      |                    | V   |
| Door Open  |                    | V-B   |
| Battery Check  |                    | V   |
| Fan Motor Check  |                    | V-B   |
| Remote Alarm Contacts  |                    | DC 30V 2A (normally open, normally closed, common)                        |
| Electrical and Noise Level                                       |                    |   |
| Power Supply   |                    | 208V-230V, 1Ø, 60Hz, NEMA 6-15P, requires NEMA 6-15R receptacle           |
| Noise Level <sup>4)</sup>  | dB(A)              | 52  |
| Options  |                    |   |
| Liquid CO <sub>2</sub> Back-Up System                            |                    | MDF-UB7-PW  |
| Liquid Nitrogen Back-Up System                                   |                    | MDF-UB7-PW-LN2  |
| Additional Shelf   |                    | MDF302SLF   |
| Temperature Recorder   |                    |   |
| Circular Type  | 6", 7 day circular | MTRC954   |
| Chart Paper  | 52 charts per box  | C7100386REV   |
| Ink Pen  | pack of 6          | R252  |
| Optional Communication System                                    |                    |   |
| Wireless, Cloud-Based, Automatic Data Management                 |                    | LabAlert® Monitoring System   |

<sup>1)</sup> Exterior dimensions of main cabinet only, excluding handle and other external projections

<sup>2)</sup> Current warranty offered at time of printing and may be subject to change; US and Canada only

<sup>3)</sup> Air temperature measured at freezer center, ambient temperature +23°C, no load

<sup>4)</sup> Nominal value, background noise 20 dB(A)

\* Refer to the user manual for detailed performance information and specifications

