

## MDF-DU502VXC-PA | FZRDR19-ULT-220

# TwinGuard®

-86°C Ultra-Low Temperature Upright Freezer

18.6 cu.ft. | 528 L









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The patented TwinGuard -86°C upright freezer is powered by a unique concept of two independent 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.

# Ultimate Sample Protection

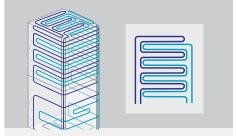
The dual cooling system offers the highest level of sample protection through the use of two independent refrigeration systems that maintain -86°C temperature. The two circuits work together for fast temperature recovery, while the secondary system keeps the temperature at -70°C if a service event occurs.

# **Efficient Sample Storage**

The use of VIP® Plus cabinet and door insulation, combined with a newly designed refrigeration system layout ensures a capacity of 384 2" storage boxes, requiring only 7.49 sq.ft. (0.70 m²) of floor space.

# Security Control and 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.



### Valuable Sample Storage

With two independent systems, each sustaining ultra-low temperatures, your samples remain safe. Optional CO<sub>2</sub> backup provides an extra layer of protection.



#### **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.



#### Ease of Use

The display panel includes a comprehensive alarm system with audible and visual warnings, unit diagnostics, running temperature log and predictive analytics.



# TwinGuard® -86°C ULT Upright Freezer

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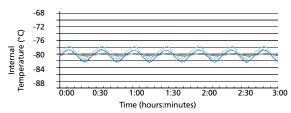


### **Improved Temperature Performance**

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.

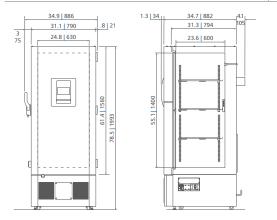
### **Temperature Uniformity Data:**





### **Dimensions**

Unit: inch | mm





**PHC Corporation of North America** 

External Dimensions (W × D × H) 10 inches   mm internal Dimensions (W × D × H) inches   mm	MDF-DU502VXC-PA   FZRDR19-ULT-220
Internal Dimensions (W × D × H)  Volume  Cu.ft.   liters  Net Weight  Capacity (2* boxes)  Capacity (3* boxes)  Inventory Racks (2* boxes)  Inventory Racks (3* boxes)  Performance  Warranty '3  Cooling Performance '0	31.1 × 34.7 × 78.5   790 × 882 × 1993
Volume cu.ft.   liters Net Weight   lbs   kg Capacity (2" boxes)   qty Capacity (3" boxes)   qty Inventory Racks (2" boxes)   qty Inventory Racks (3" boxes)   qty Inventory Racks (3" boxes)   qty Performance Warranty <sup>20</sup> Cooling Performance <sup>20</sup>   °C Temperature Setting Range <sup>30</sup>   °C Temperature Control Range <sup>30</sup>   °C Cooling Performance <sup>20</sup>   °C Cooling Performance <sup>20</sup>   °C Cooling Performance <sup>20</sup>   °C Control Control Control  Control  Control  Control  Control  Control  Control  Control  Control  Cornerssors   qty Compressors   W Refrigeration System   qty Compressors   W Refrigerant   inches I mm  Construction  Exterior Material   inches I mm  Construction  Exterior Material   10 Under Door   qty   10 Inner Doors   qty Shelves   qty Shelf Dimensions (W x D)   inches   mm  Max. Load per Shelf   lbs   kg Vacuum Release Port   qty Access Ports   qty Access Port Diameter   inches   mm  Casters   qty Alarms   (v Power Failure   Emperature (High and Low) Sensor Failure   Door Open   Battery Check   Fan Motor Check   Cooling Circuit Abnormality   Remote Alarm Contacts  Electrical and Noise Level  Power Supply Voltage Booster   Noise Level <sup>40</sup>   dB(A)  Options Inner Door Kit with 5 Smaller Doors   Inner Door Kit with 4 Smalle	24.8 × 23.6 × 55.1   630 × 600 × 1400
Net Weight   Ibs   kg   Capacity (2* boxes)   qty   Capacity (3* boxes)   qty   Inventory Racks (2* boxes)   qty   Inventory Racks (3* boxes)   qty   Inventory Racks (3* boxes)   qty   Performance   Warranty 3*   Cooling Performance 3*   °C   Temperature Setting Range 3*   °C   Cooling Performance 3*   °C   Cooling Circuit Abnormality	18.6   528
Capacity (2" boxes) qty  Capacity (3" boxes) qty  Inventory Racks (2" boxes) qty  Inventory Racks (3" boxes) qty  Performance  Warranty 3"  Cooling Performance 3"  Service Event (System A or B)  Control  Control  Control  Control  Control  Control  Refrigeration  Refrigeration System qty  Compressors W  Refrigeration System qty  Compressors W  Refrigeration Material  Insulation Thickness, Material inches I mm  Construction  Exterior Material  Outer Door qty  Inner Doors qty  Shelves qty  Shelf Dimensions (W x D) inches   mm  Max. Load per Shelf   lbs   kg  Vacuum Release Port qty  Access Port Diameter   inches   mm  Casters qty  Alarms (**  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 4" dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Sm	648   294
Capacity (3* boxes) qty Inventory Racks (2* boxes) qty Inventory Racks (3* boxes) qty  Performance  Warranty 2**  Cooling Performance 3**  Cooling Cincuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 4**  Coptions  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 5 Smaller Doors	384
Inventory Racks (2" boxes) qty Inventory Racks (3" boxes) qty  Performance  Warranty 3" Cooling Performance 3" Controlle  Controlle  Controlle  Display Temperature Sensor  Refrigeration  Refrigeration System qty Compressors W Refrigerant Insulation Thickness, Material inches I mm  Construction  Exterior Material Interior Material Interior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelves qty Shelf Dimensions (W x D) inches   mm  Max. Load per Shelf lis   kg  Vacuum Release Port qty  Access Ports qty  Access Port Diameter inches   mm  Casters qty  Alarms  Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level  Power Supply  Voltage Booster Noise Level 4"  Coptions  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 9 System  Temperature Recorder  Circular Type  6", 7 day circular	256
Inventory Racks (3" boxes)  Performance  Warranty 3" Cooling Performance 3" Control Control Control Control Controller Display Temperature Sensor Refrigeration Refrigeration System qty Compressors wv Refrigerant Insulation Thickness, Material inches I mm  Construction Exterior Material Outer Door qty Inner Doors qty Shelves qty Shelf Dimensions (W x D) inches   mm Max. Load per Shelf libs   kg Vacuum Release Port qty Access Port Diameter inches   mm Casters qty Alarms (Casters qty Alarms (Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level  Power Supply Voltage Booster Noise Level 40 Coptions Inner Door Kit with 5 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 S	16
Performance  Warranty 20 Cooling Performance 30 Cocoling Performance 30 CC Temperature Setting Range 30 CC Cooling Performance 30 Service Event (System A or B) Controll  Controll Controller Display Temperature Sensor Refrigeration Refrigeration System QC Refrigerant Insulation Thickness, Material Interior Material Unter Door Shelves Shelf Dimensions (W x D) Max. Load per Shelf Vacuum Release Port Access Ports Qty Access Port Diameter Casters Qty Alarms Quer Door Bettery (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 40 Coptions Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors	16
Cooling Performance 30 °C Temperature Setting Range 30 °C Temperature Control Range 30 °C Cooling Performance 30 °C Cooling Performance 30 °C Cooling Performance 30 °C Control  Control  Control  Control  Control  Refrigeration  Refrigeration System qty Compressors W Refrigeration Insulation Thickness, Material inches I mm  Construction  Exterior Material Interior Material Interior Material Outer Door qty Inner Doors qty Shelves qty Shelf Dimensions (W × D) inches   mm  Max. Load per Shelf   bis   kg Vacuum Release Port qty Access Port to qty Access Port Diameter inches   mm  Casters qty  Alarms (** Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit w	10
Cooling Performance 30 °C Temperature Setting Range 30 °C Temperature Control Range 30 °C Cooling Performance 30 °C Cooling Performance 30 °C Control Control Controller Display Temperature Sensor Refrigeration Refrigeration System qty Compressors W Refrigerant Insulation Thickness, Material inches I mm  Construction Exterior Material Interior Material Interior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelves qty Access Port qty Access Port qty Access Port Diameter inches   mm  Casters qty Alarms Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 40 dB(A) Options Inner Door Kit with 5 Smaller Doors Inner Door Kit with 5 Smaller D	5
Temperature Setting Range 30 °C Temperature Control Range 30 °C Cooling Performance 30 Service Event (System A or B)  Control  Controller  Display  Temperature Sensor  Refrigeration  Refrigeration System qty Compressors W Refrigerant  Insulation Thickness, Material inches I mm  Construction  Exterior Material Interior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelves qty Access Ports qty Access Ports qty Access Port Liameter  Casters qty  Alarms (** Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster Noise Level 40 db Ag Circular  Temperature (Trius of Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 5 Smaller Doors In	5 years parts and labor
Temperature Control Range 30 °C Cooling Performance 30 Service Event (System A or B)  Control Control Controller Display Temperature Sensor Refrigeration Refrigeration System	-86
Cooling Performance 30 Service Event (System A or B)  Control  Controller  Display  Temperature Sensor  Refrigeration  Refrigeration System	-50 to -90 in 1° increments
Service Event (System A or B)  Control  Controller  Display  Temperature Sensor  Refrigeration  Refrigeration System  Qompressors  W  Refrigerant  Insulation Thickness, Material  Interior Material  Outer Door  Exterior Material  Outer Door  Shelves  Guy  Shelves  Guy  Shelves  Shelf Dimensions (W x D)  Max. Load per Shelf  Vacuum Release Port  Access Ports  Qty  Access Port Diameter  Casters  Qty  Access Port Diameter  Casters  Qty  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check  Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 5 System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6*, 7 day circular	-50 to -86 in 1° increments
Controller  Display Temperature Sensor  Refrigeration  Refrigeration System  Refrigeration  Insulation Thickness, Material  Insulation Thickness, Material  Insulation Thickness, Material  Outer Door  Interior Material  Outer Door  Inner Doors  Inner Doors  Inner Doors  Inner Doors  Inner Doors  Inner Doors  Interior Material  Outer Door  Inner Doors  Inner Doors  Inner Door  Inner Doors  Inner Door  Inner Door Inner Doors  Inner Door Inner Doors  Inner Door Inner Inn	-70
Display Temperature Sensor  Refrigeration Refrigeration System qty Compressors w Refrigerant Insulation Thickness, Material inches I mm  Construction Exterior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W x D) inches   mm  Max. Load per Shelf pty Vacuum Release Port qty Access Ports qty Access Port Diameter inches   mm  Casters qty Alarms (Casters qty Alarms qty Alarms (Casters qty Alarms qty Alarms (Casters qty Alarms q	
Display Temperature Sensor  Refrigeration Refrigeration System qty Compressors w Refrigerant Insulation Thickness, Material inches I mm  Construction Exterior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W x D) inches   mm  Max. Load per Shelf pty Vacuum Release Port qty Access Ports qty Access Port Diameter inches   mm  Casters qty Alarms (Casters qty Alarms qty Alarms (Casters qty Alarms qty Alarms (Casters qty Alarms q	Microprocessor, touchscreen data entry, password protected
Temperature Sensor  Refrigeration  Refrigeration System qty Compressors W  Refrigerant  Insulation Thickness, Material inches I mm  Construction  Exterior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W × D) inches   mm  Max. Load per Shelf   lbs   kg  Vacuum Release Port qty  Access Ports qty  Access Port Diameter inches   mm  Casters qty  Alarms (C  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Ilquid CO, Back-Up System Liquid Nirogen Back-Up System  Temperature Recorder  Circular Type 66*, 7 day circular	LCD color touchscreen
Refrigeration Refrigeration System qty Compressors W Refrigerant Insulation Thickness, Material inches I mm  Construction Exterior Material Outer Door qty Inner Doors qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W x D) inches   mm  Max. Load per Shelf   lbs   kg  Vacuum Release Port qty Access Ports qty Access Port Diameter inches   mm  Casters qty Alarms (C) Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 9 dB(A) Options Inner Door Kit with 4 Smaller Doors Iciquid CO, Back-Up System Temperature Recorder Circular Type 6°, 7 day circular	Pt-1000
Refrigeration System qty Compressors W Refrigerant Insulation Thickness, Material inches I mm  Construction Exterior Material Interior Material Outer Door qty Inner Doors qty Shelf Dimensions (W × D) inches   mm  Max. Load per Shelf qty Shelf Dimensions (W × D) inches   mm  Max. Load per Shelf qty Access Ports qty Access Ports qty Access Port Diameter inches   mm  Casters qty Alarms (C) Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level (A) Options Inner Door Kit with 4 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Temperature Recorder Circular Type (6", 7 day circular	111000
Compressors  Refrigerant  Insulation Thickness, Material  Insulation Thickness, Material  Construction  Exterior Material  Outer Door  Interior Material  Outer Door  Qty  Inner Doors  Shelves  Shelves  Qty  Shelf Dimensions (W × D)  Max. Load per Shelf  Vacuum Release Port  Qty  Access Ports  Qty  Access Ports  Qty  Access Port Diameter  Casters  Qty  Alarms  (Casters  Qty  Alarms  Qty  Alarms  Qty  Alarms  (Casters  Qty  Alarms  Qty  Alarms  Qty  Alarms	
Refrigerant  Insulation Thickness, Material  Insulation Thickness, Material  Exterior Material  Outer Door  Inner Doors  Shelves  Qty  Shelves  Qty  Shelf Dimensions (W x D)  Max. Load per Shelf  Vacuum Release Port  Access Ports  Qty  Access Port Diameter  Casters  Qty  Alarms  (Casters  Qty  Alarms  Qty  Alarms  (Casters  Qty  Alarms  Qty  Alarms  (Casters  Qty	2 (auto-cascade)
Insulation Thickness, Material  Construction  Exterior Material Interior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W × D) inches   mm Max. Load per Shelf   lbs   kg  Vacuum Release Port qty  Access Ports qty  Access Port Diameter inches   mm Casters qty  Alarms (**  Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply Voltage Booster Noise Level **  Options Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO, Back-Up System Liquid Nirogen Back-Up System Temperature Recorder  Circular Type 6*, 7 day circular	(2) 1100
Construction  Exterior Material Interior Material Outer Door	Mixed HC/HFC blended
Exterior Material Interior Material Outer Door qty Inner Doors qty Shelves qty Shelves qty Shelves qty Shelf Dimensions (W × D) inches   mm Max. Load per Shelf   lbs   kg Vacuum Release Port qty Access Ports qty Access Port Diameter inches   mm Casters qty Alarms (C Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 40 Options Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Iciquid CO <sub>2</sub> Back-Up System Temperature Recorder Circular Type 66*, 7 day circular	3.1 I 80, foamed-in-place + VIP Plus vacuum insulated panels
Interior Material Outer Door qty Inner Doors qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W × D) inches   mm Max. Load per Shelf   lbs   kg Vacuum Release Port qty Access Ports qty Access Port Diameter inches   mm Casters qty Access Port Diameter inches   mm Casters qty Alarms (** Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 40 dB(A) Options Inner Door Kit with 5 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Liquid Norgen Back-Up System Temperature Recorder Circular Type 66", 7 day circular	The second secon
Interior Material Outer Door qty Inner Doors qty Inner Doors qty Shelves qty Shelves qty Shelf Dimensions (W × D) inches   mm Max. Load per Shelf   lbs   kg Vacuum Release Port qty Access Ports qty Access Port Diameter inches   mm Casters qty Access Port Diameter inches   mm Casters qty Alarms (** Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 40 dB(A) Options Inner Door Kit with 5 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Liquid Norgen Back-Up System Temperature Recorder Circular Type 66", 7 day circular	Painted steel
Outer Door   qty Inner Doors   qty Shelves   qty Shelves   qty Shelves   qty Shelf Dimensions (W x D)   inches   mm  Max. Load per Shelf     lbs   kg Vacuum Release Port   qty  Access Ports   qty Access Port Diameter   inches   mm  Casters   qty  Alarms   (** Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level  Power Supply Voltage Booster Noise Level    Options Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Temperature Recorder  Circular Type   6°, 7 day circular	Painted steel
Inner Doors  Inner Doors  Shelves  Shelves  Shelf Dimensions (W × D)  Max. Load per Shelf  Vacuum Release Port  Access Ports  Access Ports  Access Port Diameter  Casters  Alarms  (**  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 4  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO <sub>2</sub> Back-Up System  Temperature Recorder  Circular Type  6*, 7 day circular	1 (key lock with provision for optional pad lock)
Shelves qty Shelf Dimensions (W × D) inches   mm  Max. Load per Shelf   lbs   kg  Vacuum Release Port qty  Access Ports qty  Access Port Diameter inches   mm  Casters qty  Alarms (C  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level (1) dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO <sub>2</sub> Back-Up System  Temperature Recorder  Circular Type (6", 7 day circular	
Shelf Dimensions (W × D) inches   mm  Max. Load per Shelf   lbs   kg  Vacuum Release Port   qty  Access Ports   qty  Access Port Diameter   inches   mm  Casters   qty  Alarms   (**  Power Failure   Temperature (High and Low)  Sensor Failure   Door Open   Battery Check   Fan Motor Check   Cooling Circuit Abnormality   Remote Alarm Contacts   Electrical and Noise Level    Power Supply   (**  Power Supply   (**  Power Supply   (**  Temperature (High and Low)    Sensor Failure   (**  Door Open   (**)  Battery Check   (**  Fan Motor Check   (**  Cooling Circuit Abnormality   (**  Remote Alarm Contacts   (**  Electrical and Noise Level   (**  Power Supply   (**)  Temperature Noise Level   (**  Options   (**  Inner Door Kit with 5 Smaller Doors   (**  Inner Door Kit with 4 Smaller Doors   (**  Liquid Co <sub>2</sub> Back-Up System   (**  Temperature Recorder   (**  Circular Type   (**), 7 day circular   (**)	2 (insulated ABS, stainless steel frames, positive latches)
Max. Load per Shelf   lbs   kg   qty    Vacuum Release Port   qty    Access Ports   qty    Access Port Diameter   inches   mm    Casters   qty    Alarms   (0    Power Failure    Temperature (High and Low)    Sensor Failure    Door Open    Battery Check    Fan Motor Check    Cooling Circuit Abnormality    Remote Alarm Contacts    Electrical and Noise Level    Power Supply   (1    Power Supply   (1    Options    Inner Door Kit with 5 Smaller Doors    Inner Door Kit with 4 Smaller Doors    Liquid CO <sub>2</sub> Back-Up System    Liquid Nitrogen Back-Up System    Temperature Recorder    Circular Type   6", 7 day circular	3 (adjustable)
Vacuum Release Port qty  Access Ports qty  Access Port Diameter inches   mm  Casters qty  Alarms  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6 6, 7 day circular	24.2 × 21.0   615 × 534
Access Ports qty  Access Port Diameter inches   mm  Casters qty  Alarms (**  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO <sub>2</sub> Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 66", 7 day circular	110   50
Access Port Diameter gty  Alarms gty  Alarms (Casters gty)  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 66", 7 day circular	2: in door (automatic release) and side wall, lower left (manual release) 3: upper back wall (back-up system),
Casters qty  Alarms  Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6°, 7 day circular	bottom left (recorder sensor), bottom right (access)
Alarms ( Power Failure Temperature (High and Low) Sensor Failure Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level Power Supply Voltage Booster Noise Level 40 dB(A) Options Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO, Back-Up System Liquid Noise Back-Up System Temperature Recorder Circular Type 6°, 7 day circular	0.6   17
Power Failure  Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality  Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6°, 7 day circular	4 (2 leveling feet on front base)
Temperature (High and Low)  Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO, Back-Up System Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 6°, 7 day circular	V = Visual Alarm, B = Buzzer Alarm, R = Remote Alarm)
Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level   Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO <sub>2</sub> Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6", 7 day circular	V-B-R
Sensor Failure  Door Open  Battery Check Fan Motor Check  Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level   Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO <sub>2</sub> Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6", 7 day circular	V-B-R
Door Open Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts Electrical and Noise Level  Power Supply Voltage Booster Noise Level 40 dB(A) Options Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO, Back-Up System Liquid Nitrogen Back-Up System Temperature Recorder Circular Type 6", 7 day circular	V-B-R
Battery Check Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply Voltage Booster Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6", 7 day circular	V-B
Fan Motor Check Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO <sub>2</sub> Back-Up System  Temperature Recorder  Circular Type  6°, 7 day circular	V
Cooling Circuit Abnormality Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level   Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Temperature Recorder  Circular Type  6", 7 day circular	V-B
Remote Alarm Contacts  Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Temperature Recorder  Circular Type  6", 7 day circular	V
Electrical and Noise Level  Power Supply  Voltage Booster  Noise Level 40  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6", 7 day circular	DC 30V 2A (normally open, normally closed, common)
Power Supply  Voltage Booster  Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Temperature Recorder  Circular Type 6", 7 day circular	, , , , , , , , , , , , , , , , , , , ,
Noise Level 40 dB(A)  Options  Inner Door Kit with 5 Smaller Doors  Inner Door Kit with 4 Smaller Doors  Liquid CO, Back-Up System  Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 6", 7 day circular	208V-230V, 1Ø, 60Hz, NEMA 6-15P, requires NEMA 6-15R receptacle
Noise Level 4 dB(A)  Options  Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 6*, 7 day circular	Standard, automatic, built-in
Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO, Back-Up System Liquid Nitrogen Back-Up System Temperature Recorder Circular Type 6", 7 day circular	52
Inner Door Kit with 5 Smaller Doors Inner Door Kit with 4 Smaller Doors Liquid CO, Back-Up System Liquid Nitrogen Back-Up System Temperature Recorder Circular Type 6", 7 day circular	
Inner Door Kit with 4 Smaller Doors Liquid CO <sub>2</sub> Back-Up System Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type  6°, 7 day circular	MDF-5ID5-PW
Liquid CO, Back-Up System Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 6", 7 day circular	MDF-5ID4-PW
Liquid Nitrogen Back-Up System  Temperature Recorder  Circular Type 6°, 7 day circular	
Temperature Recorder  Circular Type 6°, 7 day circular	MDF-UB7-PW
Circular Type 6*, 7 day circular	MDF-UB7-PW-LN2
Chart Paper 52 charts per box	MTRC954 <sup>5)</sup>
	C7100386REV
Ink Pen pack of 6	R252
Optional Communication System	
Wireless, Cloud-Based, Automatic Data Management	LabAlert® Monitoring System

- $^{\scriptsize 1)}$  Exterior dimensions of main cabinet only, excluding handle and other external projections
- 2) Current warranty offered at time of printing and may be subject to change; US and Canada only
- 3) Air temperature measured at freezer center, ambient temperature +30°C, no load
- <sup>4)</sup> Nominal value, background noise 20 dB(A) <sup>5)</sup> Requires sensor cover MTR-DU700SF-PW

#### Specifications are subject to change without notice.

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