


MDF-DU503VXH-PE

# TwinGuard eco

-86°C Upright Freezer

528 L

DUAL cooling system | ECO natural refrigerants | IC+ inverter compressor | MDR Medical Device Regulation | VIP PLUS vacuum insulation | electronic door lock

## Next generation "Twin Guard" Dual Cooling system with reduced power consumption.

The next generation **Twin Guard Eco** Ultra Low Temperature freezers use natural refrigerants and inverter controlled compressors, reducing energy usage up to 50%*, with enhanced access control via an electronic lock with facial recognition (optional) and NFC protection (optional). to provide the highest level of protecting for your valuable samples.

### Ultimate Sample Protection

The Dual Cooling System offers high levels of protection through the use of two independent refrigeration systems.
If one system unexpectedly fails the other can maintain the freezer in the -75°C range.

### Performance and Reliability

Naturally ocurring hydrocarbon (HC) refrigerants have minimal effect on the environment. Combined with inverter technology, these refrigerants also provide more efficiency without compromising cooling performance, ambient tolerance, and recovery speeds following door openings.

### Security control and Monitoring

An eye level, door mounted, 10.1 inches high resolution LCD touchscreen allows full user control. A USB port makes transferring logged data to a PC convenient. All performance attributes are displayed and an internal temperature log can be expressed in graphic form over time.



### Valuable Sample Storage

Securely store valuable and irreplaceable samples with the upmost confidence that they won't be lost in the case of compressor failure.




### Natural Refrigerants

Natural refrigerants, compressors and integrated electronics combined to lower operating costs resulting in less energy consumption and less heat output. Freezer operation is managed by effectively balancing temperature performance and energy management.




### Electronic Door Lock

Know who entered the freezer and when. Track how long the door was open.
4 Ways to Lock
- Pin code
- Unique individual key
- Facial recognition (optional)
- Proximity Card (optional)

* compared to previous model MDF-DU502VX-PE

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# TwinGuard eco
## -86°C Upright Freezer



## Dual Cooling System

The Dual Cooling System offers ultimate sample protection. The two independent refrigeration systems provide a reliable and exceptionally stable -86°C ultra low temperature environment. If one system unexpectedly fails, the other can maintain the freezer in the -75°C range until service can be arranged.

## Filterless Design

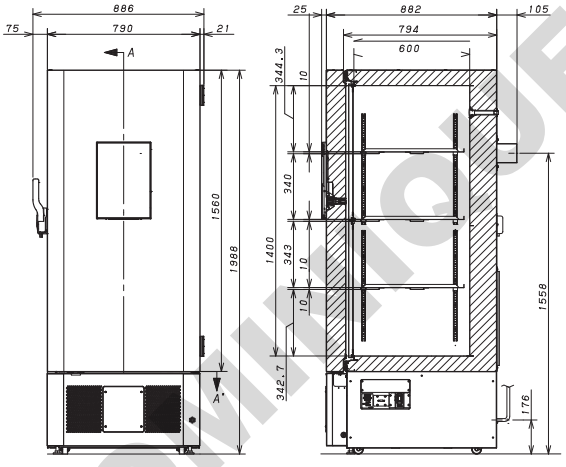
The filterless construction of the freezers reduces routine maintenance time by eliminating the need for regular cleaning of filters.

## Innovative Cabinet Design

The enhanced cabinet design with chamfered edges reduces footprint for use in multi freezer laboratories.

## Dimensions

Unit: mm




CE 0123 Available in these countries as a Class IIa Medical Device.
Austria, Belgium, Cyprus, Denmark, France, Germany, Ireland, Italy, Liechtenstein, Luxemburg, Malta, the Netherlands, Poland, Spain, Switzerland and the United Kingdom.

CE Available as equipment for laboratory use in:
EEA countries, Switzerland, the United Kingdom and Turkey.

| Model Number | | MDF-DU503VXH-PE |
|---|---|---|
| External dimensions (W x D x H)[1] | mm | 790 x 882 x 1988 |
| Internal dimensions (W x D x H) | mm | 630 x 600 x 1400 |
| Volume | litres | 528 |
| Net weight | kg | 262 |
| Capacity | 2" boxes | 384 |
| **Performance** | | |
| Cooling performance [2] | °C | -86 |
| Temperature setting range | °C | -90 to -40 |
| Temperature control range [2] | °C | -86 to -40 |
| **Control** | | |
| Controller | | Microprocessor, non-volatile memory |
| Display | | LCD Touch Screen |
| Temperature sensor | | Pt-1000 |
| **Refrigeration** | | |
| Refrigeration system | | Independent Dual-Cooling |
| Compressors | W | 2 x 920 |
| Refrigerant | | HC mixed refrigerant (R-600/R-170/R-50) |
| Refrigerant weight in each cooling circuit | g | 113 |
| GWP of refrigerant | | GWP= 1.8 |
| Total Refrigerant weight ($CO_2$ equivalent) | t | 0.00010 |
| Insulation material | | PUF / VIP Plus |
| Insulation thickness | mm | 80 mm |
| **Construction** | | |
| Exterior material | | Painted Steel |
| Interior material | | Painted steel |
| Outer doors | qty | 1 |
| Outer door lock | | Y |
| Inner doors | qty | 2 |
| Shelves | qty | 3 (stainless steel) |
| Max. load - per shelf | kg | 50 |
| Max. load - total [3] | kg | 415 |
| Vacuum release port | qty | 1 automatic |
| Access port | qty | 3 |
| - position | | back x 1, bottom x 2 |
| - diameter | Ø mm | 17 |
| Casters | qty | 4 (2 leveling feet) |
| **Alarms** | | (R = Remote Alarm, V = Visual Alarm, B = Buzzer Alarm) |
| Power failure | | V-B-R |
| High temperature | | V-B-R |
| Low temperature | | V-B-R |
| Filter | | Filterless design |
| Door open | | V-B |
| **Electrical and noise level** | | |
| Power supply | V | 220 / 230 / 240 V |
| Frequency | Hz | 50 |
| Noise level[4] | dB [A] | 52 |
| **Options** | | |
| Small inner door kit | set of 5 | MDF-51D5-PW [5] |
| Small inner door kit | set of 4 | MDF-51D4-PW |
| Face regognition kit | | MTR-FRC-PW |
| NFC System [7] | | NFC reader: MTR-NFC-PW |
| | set of 5 | IC Cards: MTR-IC-PW |
| Liquid $CO_2$ back-up | | MDF-UB9-PW |
| Temperature recorders - Circular type | | MTR-G85C-PE [6]<br>Chart paper: RP-G85-PW / Ink pen: PG-R-PW |
| Temperature recorders - Continuous strip type | | MTR-85H-PW [6]<br>Chart paper: RP-85-PW / Ink pen: DF-38FP-PW<br>Recorder housing: MDF-S3085-PW |
| Recorder sensor cover | | MTR-DU700SF-PW |

Appearance and specifications are subject to change without notice.

[1] Exterior dimensions of main cabinet only, excluding handle and other external projections
[2] Air temperature measured at freezer centre, ambient temperature +30°C, no load
[3] Max. load is the total of the load distributed over all shelves (3) and chamber bottom surface. The weight is the maximum load for chamber inside and does not account for maximum load on casters equipped with product.
[4] Nominal value - Background noise 20dB[A]
[5] Usable storage capacity will be 320 x 2" boxes with installation of MDF-5ID5-PW and additional shelf
[6] Requires sensor cover MTR-DU700SF-PW
[7] The NFC System is only available in EEA member countries, UK, Switzerland, and Turkey.

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