



Partnering Life Sciences Development

PHCbi Biomedical products are designed to meet the demands of the life science industries by providing reliability, accuracy, and usability to facilitate cutting-edge research and preservation of precious samples.





PHCbi

"PHCbi" is a new brand for our Biomedical business that has globally supported cutting-edge research and healthcare for over 50 years.

Since 1966, when we first launched pharmaceutical refrigerators, we aimed to support cutting-edge research in life sciences. We have provided equipment and services required for sample preservation, bacterial and cell culture as well as maintenance of cleanroom environments.

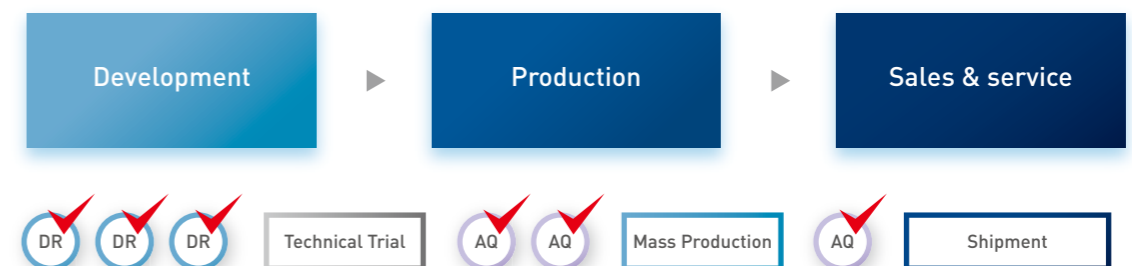
Life Science Innovator Since 1966

1966	1977	1991	2008	2009	2012	2014	2017	2019
SAR-130M Pharmaceutical Refrigerator	MDF-390AT -80°C Ultra Low Temperature Freezer developed	MDF-1155ATN World's Lowest Temperature -152°C Freezer Developed	MDF-U400VX -85°C Dual Cooling System Freezer developed	MCO-19AICUVH World's First H ₂ O ₂ / Hydrogen Peroxide Chamber decontamination Function equipped	MDF-DU700VH Energy saving HFC-free -86°C Ultra Low Temperature Freezer	MCO-170AICUVH Enhanced efficient Cleaning and storage Integrated Tray Catches Structure CO ₂ Incubator	MDF-DU702VX High Efficiency Insulation/Efficient Sample Storage and more Efficient Dual Cooling System	MPR-N450FH Energy saving HFC-free Pharmaceutical Refrigerator with Freezer

Commitment to Quality PHCbi MONOZUKURI* Way

The most important points that customers demand of our products are quality and reliability. At our factories, we have established the "MONOZUKURI Way" as a theme of action. We carry out various initiatives to improve quality while working to pass on the legacy of traditional Japanese manufacturing technology in a multi-faceted fashion. * [MONOZUKURI] is the Japanese word for [Craftsmanship]

Our Quality Management System



In our quality management and development process (Quality Management System), we establish a number of checkpoints in the value chain. Staff with various occupational abilities carry out stringent evaluation and improvement of products from the customer's perspective. This is the system that creates our high level of quality.

Japan Factory (Gunma)

Established in 1959 as the Tokyo Manufacturing Site of Sanyo Electric Co., Ltd., this is our core factory which has the Product Technology Development/Design Department, Quality Assurance Department, and Production Department.

As of April 2018, Over 500 PHC employees engaged in the development, quality assurance, and production of products of PHCbi. Within the facility, we have many environmental testing laboratories, and these are used for stringent product screening with the aim of studying technology development and maintaining quality.

In addition, at the "MONOZUKURI-Dojo (Training)," the purpose is to pass down our legacy for traditional technology. We carry out various kinds of training to improve skills such as brazing capillary tubes of Ultra-low Temperature Freezers, etc., which require a high level of skill.






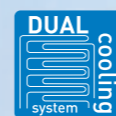
Application

*Blood must be preserved in Blood Bank Refrigerator.

Function icons / Logos

Preservation

Client	Universities, private companies, laboratories/research institutions		Hospitals, universities, private companies, blood centers
Typical needs	Preservation of cells, microbes, specimens	Preservation of reagents, frozen plasma	Drugs, blood*, reagents
Storage temperature	-150°C, -86°C	-40°C/-30°C to -20°C	+4°C
	Ultra-low temperature freezers 	Biomedical Freezers 	Pharmaceutical Refrigerators Blood Bank Refrigerators 
Pages	5 — 10	11 — 12	13 — 16



Dual Cooling System

Dual Cooling System offers ultimate sample protection.



VIP PLUS vacuum insulation

VIP PLUS vacuum insulation maximises storage capacity.



EZlatch Easy Access Door Handle

The EZlatch makes access to stored samples even easier.



Natural Refrigerants

Naturally occurring hydrocarbon (HC) refrigerants improve performance and reduce running costs.



Inverter Compressors




Inverter Compressors maximise cooling performance and reduce energy consumption.



A full-color LCD Touch Panel

Various functions such as logging the temperature history, and setting up passwords and alarms can all be managed on the screen.

Incubation

Client	Universities, private companies, hospitals	Universities, private companies, hospitals, waterworks (water quality inspection)	Universities, private companies, agricultural experiment stations
Typical needs	Animal cell incubation (temperature, humidity, gas density)	Incubation of microbes (temperature)	Incubation of plants (temperature, illuminance, humidity)
	CO₂ Incubators 	Cooled Incubators 	Climate Chambers 
Pages	17 — 20	21	22



Integrated Tray Catches

Significantly minimize cleaning time and improves productivity.



Zirconia O₂ Sensor

The unique, solid state Zirconia O₂ sensor delivers precise oxygen control.



A full-color LCD Touch Panel

Various functions such as logging the temperature history, and setting up passwords and alarms can all be managed on the screen.



H₂O₂ Decontamination

The unique H₂O₂ decontamination system delivers fast and validatable decontamination.



inCu-saFe germicidal interior

inCu-saFe germicidal interior prevents contamination.



SafeCell UV Lamp

The SafeCell UV lamp prevents contamination.



Dual IR CO₂ Sensor

The single beam, dual detector IR CO₂ Sensor offers continuous calibration for excellent control, accuracy and stability.



IR CO₂ Sensor

The IR CO₂ Sensor offers accurate and reliable CO₂ measurement.



Dual Heat Sterilisation

Two independent heaters enable cell culturing to continue uninterrupted during sterilization.

TwinGuard

The most secure ultra-low temperature freezers for the storage of high value samples

-86°C



MDF-DU302VX 360 L

MDF-DU502VX 528 L
MDF-DU502VXC

MDF-DU702VX 729 L
MDF-DU702VXC



Model No.	MDF-DU302VX	MDF-DU502VX	MDF-DU502VXC	MDF-DU702VX	MDF-DU702VXC
Temperature Control Range	-86°C to -50°C				
Effective Capacity	360 litres	528 litres		729 litres	
External Dimensions (W x D x H)*	670 x 882 x 1840 mm	790 x 882 x 1993 mm		1030 x 882 x 1993 mm	
Internal Dimensions (W x D x H)	490 x 600 x 1230 mm	630 x 600 x 1400 mm		870 x 600 x 1400 mm	
Net Weight (Approx.)	225 kg	285 kg	294 kg	328 kg	338 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.



MDF-DC500VX 575 L

MDF-DC700VX 715 L
MDF-DC700VXC



Model No.	MDF-DC500VX	MDF-DC700VX	MDF-DC700VXC
Temperature Control Range	-86°C to -50°C		
Effective Capacity	575 litres	715 litres	
External Dimensions (W x D x H)*	2010 x 845 x 1070 mm	2300 x 845 x 1070 mm	2300 x 955 x 1070 mm
Internal Dimensions (W x D x H)	1190 x 640 x 756 mm	1480 x 640 x 756 mm	
Net Weight (Approx.)	328 kg	358 kg	366 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.



DUAL cooling system **TwinGuard**

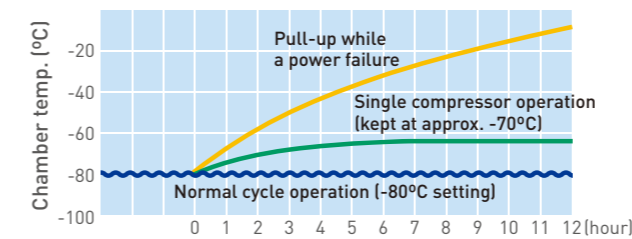
Ultimate Sample Protection

Unlike conventional ultra low freezers, TwinGuard ULT freezers have two independent refrigeration systems to provide the highest levels of sample security. Should one system unexpectedly fail, the other will maintain a temperature in the -70°C range ensuring that the integrity of irreplaceable and potentially life-saving samples are not put at risk.

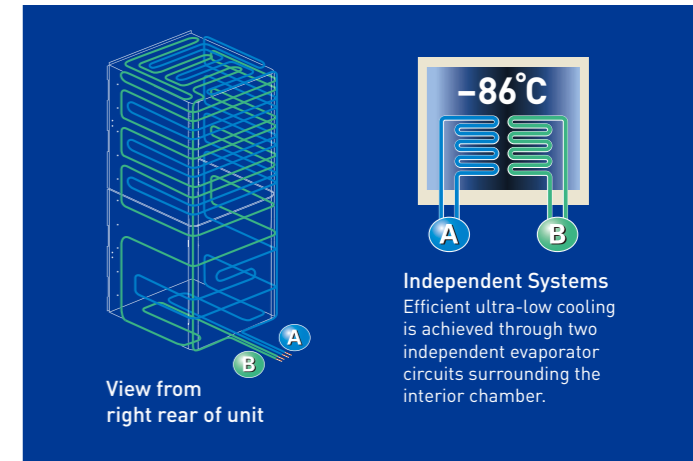
Safe and Secure Extra-Large Capacity Ultra-Low Freezer with Dual Cooling System

Secure storage with new dual cooling system

The Dual Cooling system is newly designated to securely store valuable biological samples. It consists of two individual compressors to provide a reliable -86°C ultra-low temperature environment. Should unexpected failure occur in one cooling circuit, the other will maintain at least -70°C.

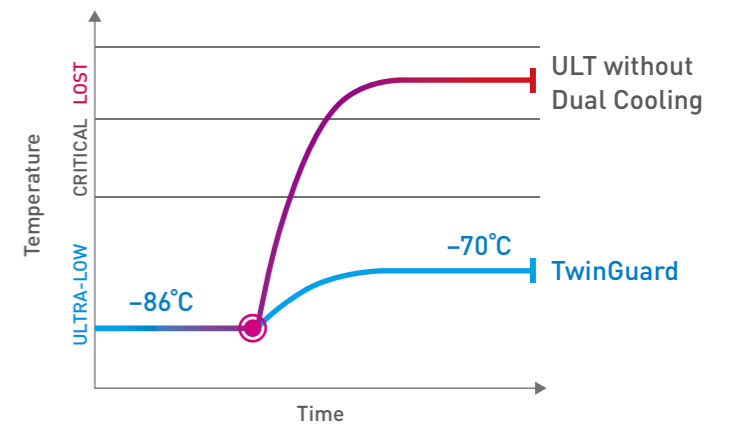


*Any unexpected failure on either of the single compressor will be alerted
*The data is a measured (AT23°C, 230V/50Hz, no load) Actual power consumption will vary depending on ambient conditions, settings and local voltage.



When sample security and peace of mind are of paramount importance, put your trust in TwinGuard ultra low freezers.

- An optimal Dual Cooling System provides an unparalleled level of safety and added peace of mind through the use of two independent refrigeration systems.
- ECO mode overlaps refrigeration cycles to reduce energy consumption.
- Advanced space-saving VIP PLUS technology (compared to our conventional models).
- Graphical LCD display with data monitoring and data log exported by USB.
- Available in Upright and Chest models.



EZlatch door handle

EZlatch door handle newly developed based on human engineering

EZlatch is designed for secure door opening/closing with minimum strength as the name suggests and makes access to stored samples easier.



PRO ECO ULT Freezer VIP ECO

-86°C

Cost-saving and environmentally friendly sample storage

Cost-saving and environmentally friendly sample storage within an optimal footprint



Model No.	MDF-DU300H	MDF-DU502VH	MDF-DU702VH	MDF-DU901VHL MDF-DU901VHA
Temperature Control Range	-86°C to -50°C	-86°C to -40°C		-86°C to -50°C
Effective Capacity	333 litres	528 litres	729 litres	845 litres
External Dimensions (W x D x H)*	750 x 870 x 1830 mm	790 x 882 x 1993 mm	1030 x 882 x 1993 mm	1150 x 870 x 1993 mm
Internal Dimensions (W x D x H)	490 x 600 x 1140 mm	630 x 600 x 1400 mm	870 x 600 x 1400 mm	1010 x 600 x 1400 mm
Net Weight (Approx.)	241 kg	246 kg	278 kg	328 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

VIP

-86°C

Excellent reliability and uniformity within an optimal footprint



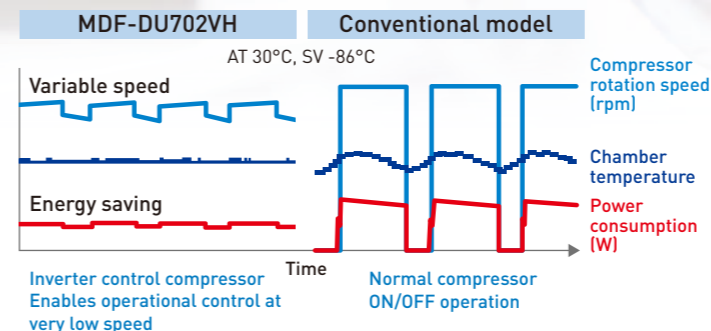
Model No.	MDF-U33V	MDF-U54V	MDF-U55V	MDF-U74V	MDF-DU900V MDF-DU900VC	MDF-DU900VC
Temperature Control Range	-86°C to -50°C					
Effective Capacity	333 litres	519 litres		728 litres	845 litres	
External Dimensions (W x D x H)*	670 x 870 x 1860 mm	770 x 870 x 1990 mm		1010 x 870 x 2010 mm	1150 x 870 x 1990 mm	
Internal Dimensions (W x D x H)	490 x 600 x 1140 mm	630 x 600 x 1380 mm		870 x 600 x 1400 mm	1010 x 600 x 1400 mm	
Net Weight (Approx.)	255 kg	296 kg	288 kg	346 kg	372 kg (PB, PE) 382 kg (PK)	382 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

ECO IC+ VIP ECO

Eco operation and Energy saving

Unlike conventional ultra low freezers, TwinGuard ULT freezers ECO ULT freezers use natural hydrocarbon (HC) refrigerants to provide minimal energy consumption, reduced environmental impact and substantially lower running costs. HC refrigerants have a high latent heat of evaporation making them much more efficient at removing heat from the freezer chamber than conventional refrigerants, resulting in up to a 55% reduction in energy consumption and costs. These refrigerants also have an extremely low Global Warming Potential, helping organizations to meet environmental objectives.

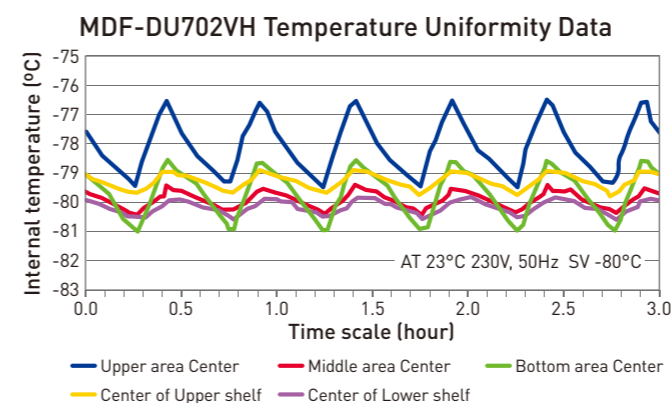


When low electrical running costs and environmental considerations are of paramount importance, put your trust in VIP ECO and PRO ECO ULT freezers.

- New heat exchanger design for greater surface area contact and overall efficiency.
- Advanced space-saving VIP PLUS Insulation (compared to our conventional models).
- Graphical LCD display with data monitoring and data log exported by USB (for MDF-DU502VH/MDF-DU702VH/MDF-DU901VHL).
- Class IIa Medical Device certified quality (Certification itself for Europe area only to comply with European regulations).



Energy Efficient, Balanced Power Smart compressors, natural refrigerants and integrated electronics combine to lower your facility's operating costs. Freezer operation is managed by the practical balance of temperature performance and energy management.



Reliable controllability and data log function

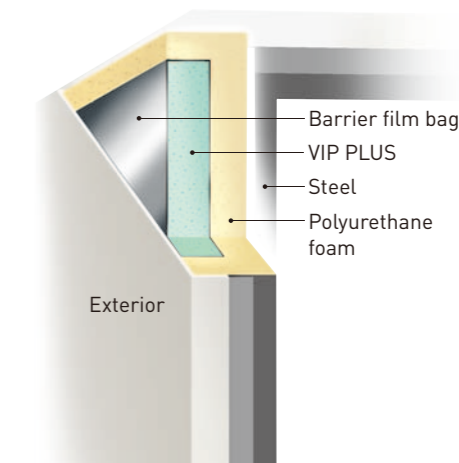
Large color LCD touchpanel is accurately controlled even with a gloved hand, while the USB port makes transferring logged data of product's operational status to a PC convenient.



VIP PLUS

Innovative V.I.P.* Technology *Vacuum Insulation Panel

VIP is the innovative insulation technology developed by PHC. VIP series contain densely packed, open cell foam insulation under the vacuum panel. This configuration dramatically enhanced the insulation capability of the freezer while reducing the wall thickness from 140mm to 70mm, and achieved nearly 30% more storage capacity than conventional insulated freezers. The VIP Plus achieved 6 times stronger thermal resistance with more rigid foam polyurethane while keeping the same thickness of 70mm.



Cryogenic Freezers

-152°C / -150°C

The most uniform storage temperatures for cryopreservation solutions



MDF-1156 128 L
MDF-1156ATN



MDF-C2156VAN 231 L
VIP PLUS

Model No.	MDF-1156	MDF-1156ATN	MDF-C2156VAN
Temperature Control Range	-152°C to -130°C		-150°C to -125°C
Effective Capacity	128 litres		231 litres
External Dimensions (W x D x H)*	1400 x 800 x 945 mm		1730 x 765 x 1010 mm
Internal Dimensions (W x D x H)	500 x 450 x 572 mm		760 x 495 x 615 mm
Net Weight (Approx.)	265 kg	272 kg	318 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

ATN: LN₂ back-up, Temperature recorder

VIP

-86°C / -80°C

Excellent reliability and uniformity within an optimal footprint



MDF-C8V1 84 L
VIP PLUS

Model No.	MDF-C8V1
Temperature Control Range	-80°C to -60°C
Effective Capacity	84 litres
External Dimensions (W x D x H)*	550 x 685 x 945 mm
Internal Dimensions (W x D x H)	405 x 490 x 425 mm
Net Weight (Approx.)	70 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.



Optional Accessories (for MDF series)

Small Inner Door Kits*



MDF-5ID-PW
[for MDF-U54V, MDF-U55V]



MDF-7ID-PW
[for MDF-U74V]



MDF-9ID-PW
[for MDF-DU900V, MDF-DU900VC, MDF-DU901VHL, MDF-DU901VHA]
2 small inner doors make 1 set
(2 sets are needed if all small inner door options are selected).



MDF-7ID4-PW



MDF-7ID5-PW



MDF-5ID4-PW



MDF-5ID5-PW

MDF-7ID4-PW/MDF-7ID5-PW

[for MDF-DU702VX, MDF-DU702VXC, MDF-DU702VH]
4 or 5 inner doors make 1 set. MDF-5ID5 and 7ID5 include an additional shelf.

MDF-5ID4-PW/MDF-5ID5-PW

[for MDF-DU502VX, MDF-DU502VXC, MDF-DU502VH]

*Please be aware cooling capacity will be less than specified if small inner doors are installed. Installation of the kit may effect usable storage capacity.

Liquid CO₂ Backup Kits



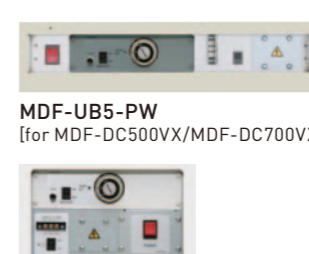
CVK-UB2-PW
[for MDF-DU300H, MDF-U33V, MDF-U54V, MDF-U55V, MDF-U74V]



CVK-UB4-PW
[for MDF-C8V1 (Mounting kit, MDF-UBK-PW)]



MDF-UB6B-PW
[for MDF-DU900V, MDF-DU900VC]



MDF-UB7-PW
[for MDF-DU302VX, MDF-DU502VX, MDF-DU502VXC, MDF-DU502VH, MDF-DU702VX, MDF-DU702VXC, MDF-DU702VH, MDF-DU901VHL, MDF-DU901VHA]



CVK-UBN2-PW
[for MDF-U33V, MDF-U54V, MDF-U55V, MDF-U74V]

Liquid N₂ Backup Kit

Temperature Recorders

2-Month Strip Chart Recorder



MTR-85H-PW

Recording range: -100°C to +50°C

No Mounting Brackets Required

32-Day Strip Chart Recorder



MTR-155H-PW

Recording range: -170°C to +30°C

MDF-1156

7-Day Circular Chart Recorder



MTR-G85A-PA/MTR-G85C-PE

Recording range: -100°C to +40°C

MDF-DU302VX, MDF-DU502VX, MDF-DU502VXC, MDF-DU702VX, MDF-DU702VXC, MDF-DC500VX, MDF-DC700VX, MDF-DC700VXC, MDF-DU300H, MDF-DU502VH, MDF-DU702VH, MDF-DU901VHL, MDF-DU901VHA, MDF-U33V, MDF-U54V, MDF-U55V, MDF-U74V, MDF-DU900V, MDF-DU900VC, MDF-C8V1

Recorder Mounting Brackets

MDF-S3085-PW
MDF-DU302VX, MDF-DU502VX, MDF-DU502VXC, MDF-DU702VX, MDF-DU702VXC, MDF-DC500VX, MDF-DC700VX, MDF-DC700VXC, MDF-DU300H, MDF-DU502VH, MDF-DU702VH, MDF-DU901VHL, MDF-DU901VHA, MDF-U33V, MDF-U54V, MDF-U55V, MDF-U74V, MDF-DU900V, MDF-DU900VC, MDF-C8V1

MDF-S30150-PW
MDF-C2156VAN

Sensor Cover

MTR-DU700SF-PW
MDF-DU302VX, MDF-DU502VX, MDF-DU502VXC, MDF-DU702VX, MDF-DU702VXC, MDF-DU502VH, MDF-DU702VH, MDF-DU901VHL, MDF-DU901VHA, MDF-DU900V, MDF-DU900VC

MTR-C8-PW
MDF-DU300H, MDF-C8V1

MTR-DU700SF-PW

MDF-DU302VX, MDF-DU502VX, MDF-DU502VXC, MDF-DU702VX, MDF-DU702VXC, MDF-DU502VH, MDF-DU702VH, MDF-DU901VHL, MDF-DU901VHA, MDF-DU900V, MDF-DU900VC

MTR-C8-PW
MDF-DU300H, MDF-C8V1

MDF Biomedical Freezers

-30°C

Stable -30°C environment with extensive storage possibilities



Model No.	MDF-MU339	MDF-MU539	MDF-MU539D	MDF-U731M	MDF-U731	MDF-U334
Temperature Control Range	-30°C to -20°C					
Effective Capacity	369 litres	504 litres	479 litres	690 litres	623 litres	274 litres
External Dimensions (W x D x H)*	616 x 770 x 1802 mm	793 x 770 x 1802 mm	793 x 770 x 1802 mm	770 x 830 x 1955 mm		614 x 709 x 1620 mm
Internal Dimensions (W x D x H)	472 x 614 x 1262 mm	649 x 614 x 1262 mm	649 x 614 x 600 mm (2 chambers)	650 x 700 x 1520 mm	650 x 700 x 1370 mm	490 x 486 x 1290 mm
Baskets (W x D x H)	Large (420 x 552 x 157 mm): 6 Small	(280 x 552 x 157 mm): 12	(280 x 552 x 157 mm): 12	Option		(446 x 369 x 220 mm): 4 (487 x 221 x 155 mm): 1
Net Weight (Approx.)	135 kg	163 kg	185 kg	152 kg	155 kg	81 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MDF Biomedical Freezer

Able to provide a stable -30°C environment



MDF-U5312 482 L

MDF Biomedical ECO Freezers

Cost-saving and environmentally friendly



MDF-MU339HL 369 L



MDF-MU539HL 504 L

Model No.	MDF-U5312	MDF-MU339HL	MDF-MU539HL
Temperature Control Range	-30°C to -20°C		
Effective Capacity	482 litres	369 litres	504 litres
External Dimensions (W x D x H)*	804 x 772 x 1802 mm	616 x 770 x 1802 mm	793 x 770 x 1802 mm
Internal Dimensions (W x D x H)	658 x 607 x 1272 mm	472 x 614 x 1262 mm	649 x 614 x 1262 mm
Baskets (W x D x H)	Large (290 x 536 x 238 mm): 4 Small (290 x 536 x 136 mm): 6	Option	Option
Net Weight (Approx.)	132 kg	122 kg	144 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MDF Biomedical ECO Freezer

Cost-saving and environmentally friendly fresh frozen plasma storage



MDF-MU549DH 479 L

Separate upper/lower compartments

MDF Biomedical Freezers

-40°C

The ideal freezing environment for preservation



MDF-U443 426 L



MDF-U5412 482 L

Model No.	MDF-MU549DH	MDF-U443	MDF-U5412
Temperature Control Range	-40°C to -20°C	-40°C to -15°C	-40°C to -20°C
Effective Capacity	479 litres	426 litres	482 litres
External Dimensions (W x D x H)*	793 x 770 x 1802 mm	800 x 832 x 1810 mm	804 x 772 x 1802 mm
Internal Dimensions (W x D x H)	649 x 614 x 600 mm (2 chambers)	640 x 615 x 1090 mm	658 x 607 x 1272 mm
Baskets (W x D x H)	Option	—	(290 x 536 x 238 mm): 4 (290 x 536 x 136 mm): 6
Net Weight (Approx.)	165 kg	213 kg	132 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MDF Biomedical Freezers

Power to counteract frequent door openings



MDF-137 138 L



MDF-237 221 L



MDF-437 425 L

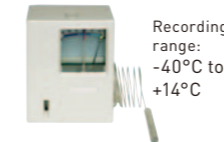
Model No.	MDF-137	MDF-237	MDF-437
Temperature Control Range	-30°C to -20°C		
Effective Capacity	138 litres	221 litres	425 litres
External Dimensions (W x D x H)*	640 x 687 x 881 mm	905 x 687 x 881 mm	1265 x 807 x 902 mm
Internal Dimensions (W x D x H)	525 x 440 x 715 mm	790 x 440 x 715 mm	1140 x 550 x 733 mm
Net Weight (Approx.)	52 kg	60 kg	81 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

Optional Accessories (for MDF series)

Temperature Recorders

32-Day Strip Chart Recorder



Recording range: -40°C to +14°C

MTR-4015LH-PE/MTR-4015LH-PA

32-Day Strip Chart Recorder



Recording range: -100°C to +50°C

MTR-85H-PW

7-Day Circular Chart Recorder



Recording range: -100°C to +40°C

MTR-G85A-PA/MTR-G85C-PE

Baskets



MDF-T07SC-PW
[for MDF-U731M, MDF-U731]
2 cases are included.
14 cases are needed to fill the entire cabinet.

MDF-03SC-PW
[for MDF-MU339, MDF-MU339HL]
2 pieces per set
W420 x D552 x H157 mm

MDF-05SC-PW
[for MDF-MU539, MDF-MU539HL, MDF-MU549DH]
2 pieces per set
W280 x D552 x H157 mm

No Mounting Brackets Required

MDF-U334, MDF-U443

MDF-U443

Recorder Mounting Brackets

[All listed models require it with above recorders]



MPR-S30W-PW

MPR-S30-PW
MDF-U5312, MDF-U5412

MPR-S30W-PW
MDF-MU339, MDF-MU539, MDF-MU539D, MDF-U731M, MDF-U731, MDF-MU339HL, MDF-MU539HL, MDF-MU549DH

MDF-S3040-PW
MDF-137, MDF-237, MDF-437

MPR-S7-PW
MDF-MU339, MDF-MU539, MDF-MU539D, MDF-U731M, MDF-U731, MDF-U5312, MDF-MU339HL, MDF-MU539HL, MDF-MU549DH, MDF-U5412

MDF-S740-PW
MDF-137, MDF-237, MDF-437

MDF-S740T-PW (for external mounting)
MDF-U334, MDF-MU539D, MDF-MU549DH

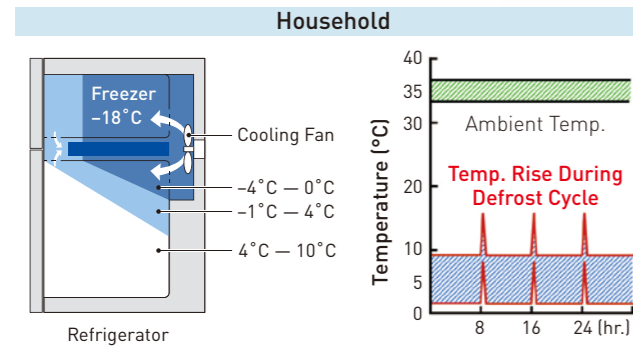
-30°C

MPR/LPR/MBR

A stable temperature environment is important for the storage of your precious drugs and samples. However, household refrigerators do not offer a stable temperature environment due to relatively simple construction. PHCbi pharmaceutical, laboratory & blood bank refrigerators employ forced air circulation and sophisticated plenum systems to realize a uniformed temperature throughout the chamber even under a changing ambient temperature environment.

Inside Temperature of Household Refrigerator

- Typical Cooling System of Household Refrigerator

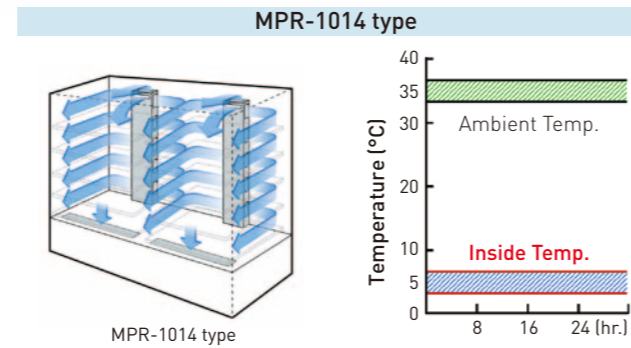


- Only one FAN to cool down refrigerator and freezer
- The difference in the temperature between the upper and lower areas of the refrigerator section can be 10°C.

In regular refrigerators it is possible for the chamber temperature to fall below 0°C depending on the ambient temperature which may cause the freezing of medicines and mediums. The auto defrost system turns on every 7 – 8 hours. During this time, the chamber air temperature rises.

Temperature Stability – temperature Uniformity

- Multi air-flow plenum cooling system



- Uniform cold air flow distribution throughout the chamber
- Ensure temperature uniformity of big capacity chamber

The cycle defrost system turns on the defrost heater during each off period of the compressor only when needed. This control method prevents large temperature rises.

LPR Laboratory Refrigerator MPR Pharmaceutical Refrigerators

2°C to 14°C

Swing Door Type Sliding Door Type



Model No.	LPR-400	MPR-S150H	MPR-S300H	MPR-S163	MPR-S313
Temperature Control Range	4°C to 14°C	2°C to 14°C			
Effective Capacity	400 litres	165 litres	345 litres	158 litres	340 litres
External Dimensions (W x D x H)*	610 x 716 x 1886 mm	800 x 500 x 1120 mm	800 x 500 x 1820 mm	800 x 465 x 1090 mm	800 x 465 x 1800 mm
Internal Dimensions (W x D x H)	516 x 550 x 1467 mm	720 x 360 x 725 mm	720 x 360 x 1425 mm	720 x 300 x 725 mm	720 x 350 x 1435 mm
Net Weight (Approx.)	81 kg	73 kg	105 kg	71 kg	100 kg
	Wire shelves type	Wire shelves type	Wire shelves type	Wire shelves type	Wire shelves type

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MPR Pharmaceutical Refrigerators

2°C to 14°C

Sliding Door Type



Model No.	MPR-S500H	MPR-S500RH	MPR-514	MPR-514R	MPR-1014	MPR-1014R
Temperature Control Range	2°C to 14°C					
Effective Capacity	554 litres	550 litres	489 litres	486 litres	1033 litres	1029 litres
External Dimensions (W x D x H)*	900 x 650 x 1824 mm		900 x 600 + (58) mm x 1790 mm		1800 x 600 + (58) mm x 1790 mm	
Internal Dimensions (W x D x H)	800 x 510 x 1425 mm		800 x 465 x 1300 mm		1700 x 465 x 1300 mm	
Net Weight (Approx.)	140 kg	146 kg	141 kg	147 kg	246 kg	258 kg
	Wire shelves type	Drawer type	Wire shelves type	Drawer type	Wire shelves type	Drawer type

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MPR Pharmaceutical Refrigerators

2°C to 23°C

Swing Door Type



Model No.	MPR-722	MPR-722R	MPR-1412	MPR-1412R
Temperature Control Range	2°C to 23°C			
Effective Capacity	684 litres	671 litres	1364 litres	1359 litres
External Dimensions (W x D x H)*	770 x 830 x 1955 mm		1440 x 830 x 1950 mm	
Internal Dimensions (W x D x H)	650 x 710 x 1500 mm		1320 x 710 x 1500 mm	
Net Weight (Approx.)	174 kg	193 kg	248 kg	287 kg
	Wire shelves type	Drawer type	Wire shelves type	Drawer type

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MPR Pharmaceutical Refrigerators with Freezer

Refrigerator: 2°C to 14°C | Freezer: -30°C to -20°C

Providing a complete storage solution; Refrigerator and freezer in one unit



MPR-N250FH*	Refrigerator: 179 L Freezer: 80 L	MPR-N450FH*	Refrigerator: 326 L Freezer: 136 L	MPR-215F	Refrigerator: 176 L Freezer: 39 L	MPR-414F	Refrigerator: 340 L Freezer: 82 L	MPR-715F	Refrigerator: 415 L Freezer: 176 L
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Model No.	MPR-N250FH	MPR-N250FSH	MPR-N450FH	MPR-N450FSH	MPR-215F	MPR-414F	MPR-414FS	MPR-715F
Temperature Control Range	Refrigerator: 2°C to 14°C Freezer: -30°C to -20°C							
Effective Capacity	Refrigerator: 179 litres Freezer: 80 litres		326 litres 136 litres		176 litres 39 litres	340 litres 82 litres		415 litres 176 litres
External Dimensions (W x D x H)**	510 x 640 x 1810 mm		800 x 640 x 1810 mm		540 x 557 x 1794 mm	800 x 600 x 1805 mm		900 x 715 x 1910 mm
Internal Dimensions (W x D x H)	Refrigerator: 430 x 516 x 903 mm Freezer: 390 x 501 x 413 mm		720 x 516 x 913 mm 680 x 470 x 415 mm		455 x 466 x 917 mm 420 x 342 x 267 mm	720 x 495 x 1425 mm 317 x 440 x 576 mm		810 x 615 x 894 mm 770 x 552 x 422 mm
Net Weight (Approx.)	95 kg	91 kg	129 kg	121 kg	86 kg	126 kg	119 kg	170 kg

* Limited countries and regions
** External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections. FS: No glass window

Optional Accessories (for MPR/MBR series)

Temperature Recorders

<p>32-Day Strip Chart Recorder</p> <p>Recording range: -40°C to +14°C</p> <p>MTR-4015LH-PE MTR-4015LH-PA</p>	<p>32-Day Strip Chart Recorder</p> <p>Recording range: -6°C to +20°C</p> <p>MTR-0621LH-PE MTR-0621LH-PA</p>	<p>7-Day Circular Chart Recorder</p> <p>Recording range: -10°C to +40°C</p> <p>MTR-G04A-PA MTR-G04C-PE</p>	<p>7-Day Circular Chart Recorder</p> <p>Recording range: -60°C to +40°C -10°C to +40°C</p> <p>MTR-G3504A-PA MTR-G3504C-PE</p> <p>* 2-pen type circular recorder for refrigeration and freezing</p>
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No Mounting Brackets Required	When mounted on top of the product MPR-215F, MPR-414F MPR-414FS, MPR-715F MPR-506DH	{ MBR-107DH, MBR-305GR } { MBR-506DH, MBR-705GR } MPR-1405GR * MBR has a recorder as a standard accessory.	{ MBR-305GR } { MBR-705GR } { MBR-1405GR }
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Recorder Mounting Brackets (All listed models require it with above recorders)	MPR-S30-PW MPR-215F, MPR-414F MPR-414FS, MPR-715F MPR-S30W-PW MPR-N250FH* MPR-N250FSH* MPR-N450FH* MPR-N450FSH* *Freezer side	MPR-S30-PW MPR-514, MPR-514R, MPR-1014 MPR-1014R, MPR-715F MPR-S30W-PW MPR-S150H, MPR-S300H, MPR-S163 MPR-S313, MPR-S500H, MPR-S500RH MPR-722, MPR-722R, MPR-1412 MPR-1412R, MPR-N250FH, MPR-N250FSH MPR-N450FH, MPR-N450FSH	MPR-S7-PW MPR-S150H, MPR-S300H MPR-S163, MPR-S313 MPR-S500H, MPR-S500RH MPR-514, MPR-514R MPR-1014, MPR-1014R MPR-722, MPR-722R MPR-1412, MPR-1412R	MPR-S7-PW MPR-N250FH, MPR-N250FSH MPR-N450FH, MPR-N450FSH MPR-215F, MPR-414F MPR-414FS, MPR-715F
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External Mounting Power Failure Alarm

MPR-48B1-PW
[for MPR-S163, MPR-S313
MPR-715F, MPR-722
MPR-722R, MPR-1412
MPR-1412R]

MPR-48B2-PW
[for MPR-S150H, MPR-S300H
MPR-S500H, MPR-S500RH
MPR-N250FH, MPR-N250FSH
MPR-N450FH, MPR-N450FSH]

Name Card Holder

MPR-15CH-PW
MPR-S150H, MPR-S300H
MPR-50CH-PW
MPR-S500H
MPR-50RCH-PW
MPR-S500RH

Additional Shelf for Freezer

MPR-250ST-PW
MPR-250FH, MPR-250FSH
MPR-450ST-PW
MPR-N450FH, MPR-N450FSH

Light Shielding Plate

MPR-25BP-PW
MPR-N250FH
MPR-45BP-PW
MPR-N450FH
MPR-72BP-PW
MPR-722, MPR-1412

Shading Glass Door

MPR-150GH-PW
MPR-S150H
MPR-300GH-PW
MPR-S300H

Inventory Drawer

MPR-31LR-PW
[x 3 for Left Compartment]
MPR-S300H, MPR-S313
MPR-31RR-PW
[x 3 for Right Compartment]
MPR-S300H, MPR-S313

Container for Freezer

MPR-45FSC-PW [x2 pcs.]
MPR-N450FH, MPR-N450FSH
MPR-715SC-PW [x2 pcs.]
MPR-715F

MBR Blood Bank Refrigerators

4°C

Robust design for safest storage of whole blood



MBR-107DH	79 L	MBR-305GR	302 L	MBR-506DH	425 L
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Model No.	MBR-107DH	MBR-305GR	MBR-506DH
Temperature	4°C		
Effective Capacity	79 litres	302 litres	425 litres
External Dimensions (W x D x H)*	400 x 495 x 1515 mm	600 x 680 x 1835 mm	800 x 832 x 1810 mm
Internal Dimensions (W x D x H)	320 x 350 x 710 mm	520 x 490 x 1150 mm	640 x 550 x 1240 mm
Net Weight (Approx.)	70 kg	147 kg	185 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

D: 32-day strip chart recorder
G: 1-day/7-day/32-day circular chart recorder
R: Drawer type



MBR-705GR	622 L	MBR-1405GR	1301 L
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Model No.	MBR-705GR	MBR-1405GR
Temperature	4°C	
Effective Capacity	622 litres	1301 litres
External Dimensions (W x D x H)*	770 x 830 x 1955 mm	1440 x 830 x 1950 mm
Internal Dimensions (W x D x H)	650 x 697 x 1500 mm	1320 x 710 x 1500 mm
Net Weight (Approx.)	213 kg	315 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

G: 1-day/7-day/32-day circular chart recorder
R: Drawer type

MCO CO₂ Incubators

Ambient temp. +5°C to 50°C

Optimising cell culture outcomes and reproducibility



MCO-170AIC/MCO-170AICL 165 L
MCO-170AICUV/MCO-170AICUVL
MCO-170AICUVH/MCO-170AICUVHL



MCO-170AICD/MCO-170AICDL 165 L
MCO-170AICUVD/MCO-170AICUVDL



MCO-230AIC/MCO-230AICL 230 L
MCO-230AICUV/MCO-230AICUVL



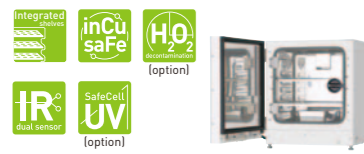
*1 Standard for Model No. Including UV *2 Standard for Model No. Including UVH

Model No.	MCO-170AIC MCO-170AICL MCO-170AICUV MCO-170AICUVL MCO-170AICUVH MCO-170AICUVHL	MCO-170AICD MCO-170AICDL MCO-170AICUVD MCO-170AICUVDL	MCO-230AIC MCO-230AICL MCO-230AICUV MCO-230AICUVL
Temperature Control Range	Ambient temperature + 5°C to 50°C (AT 5°C to 35°C)		
CO ₂ Setting Range	0 to 20%		
Chamber Humidity	95 ±5% R.H.		
Interior Volume	165 litres	165 litres	230 litres
External Dimensions (W x D x H)*	620 x 730 x 905 mm	620 x 755 x 905 mm	770 x 730 x 905 mm
Internal Dimensions (W x D x H)	490 x 523 x 665 mm	490 x 523 x 665 mm	643 x 523 x 700 mm
Net Weight (Approx.)	80 kg	79 kg (AICD), 80 kg (AICUVD)	90 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.



MCO-50AIC 50 L
MCO-50AICL



MCO-170AC 165 L
MCO-170ACL



MCO-80IC 851 L



Model No.	MCO-50AIC/MCO-50AICL	MCO-170AC/MCO-170ACL	MCO-80IC
Temperature Control Range	Ambient temperature + 5°C to 50°C (AT 5°C to 35°C)		
CO ₂ Setting Range	0 to 20%		
Chamber Humidity	95 ±5% R.H.		Normal mode; Over 80% R.H. High humidity mode; Over 90% R.H.
Interior Volume	50 litres	165 litres	851 litres
External Dimensions (W x D x H)*	480 x 550 x 585 mm	620 x 730 x 905 mm	986 x 853 x 2040 mm
Internal Dimensions (W x D x H)	370 x 363 x 385 mm	490 x 523 x 665 mm	806 x 693 x 1524 mm
Net Weight (Approx.)	45 kg	74 kg	275 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.



Increase in cleaning and storage efficiency with Integrated Tray Catches

The unit employs an integrated tray structure without shelf supports thereby reducing the number of interior components by approximately 80%* and significantly saving cleaning time needed when changing cells for incubation.

Compared to current products, the required cleaning time and task are Approx. **1/5***

Interior components of MCO-170AIC



Approx. **80%*** fewer interior components

Interior components: 5

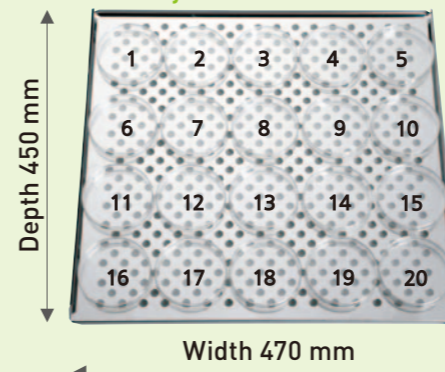
Interior components of MCO-19AIC



Interior components: 26

Tray space has increased by approximately 25%* while using virtually the same installation space used in conventional models. Four more 100ø dishes can be set up than when using conventional models.

Tray from MCO-170AIC

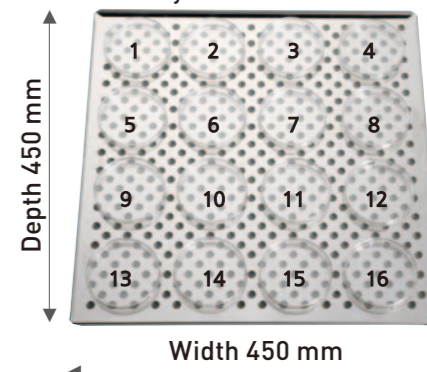


100ø 20 dishes

Approx. **25%*** more storage

4 additional 100ø dishes can be set up

Tray from MCO-19AIC



100ø 16 dishes



In 2 hours and half (approx.) H₂O₂ Decontamination

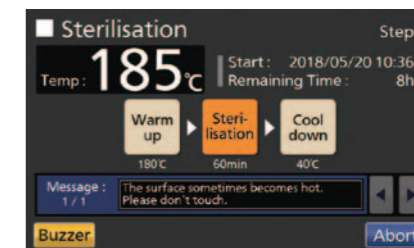


Approx. **2.5 hrs****

The high-speed decontamination system using H₂O₂ that is also used for in regenerative medicine equipment can complete the entire decontamination process in approximately 135 minutes (about 2 hours including preparation time), enhancing work efficiency for researchers and enabling complete decontamination within the unit.



Solving issues in dry heat sterilisation Dual Heat Sterilisation



Approx. **11 hrs 180°C**

No more problems during dry heat sterilisation: such as interior components removal during sterilisation; temperature/CO₂ density composition before restart; impacts to temperature when stacking two boxes; and current consumption.

*Compared to MCO-19AIC
**PHCbi measurement. Decontamination time differs depending on time required for cabinet cleaning and interior parts installation.



MCO-170M 161 L
MCO-170ML

MCO-50M 50 L



Model No.	MCO-170M/MCO-170ML	MCO-50M
Temperature Control Range	Ambient temperature + 5°C to 50°C (AT 5°C to 35°C)	
CO ₂ Setting Range	0 to 20%	
O ₂ Setting Range	1 to 18%, 22 to 80%	
Chamber Humidity	95 ±5% R.H.	
Interior Volume	161 litres	50 litres
External Dimensions [W x D x H]*	620 x 730 x 905 mm	480 x 550 x 585 mm
Internal Dimensions [W x D x H]	490 x 523 x 665 mm	370 x 363 x 385 mm
Net Weight [Approx.]	77 kg	46 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

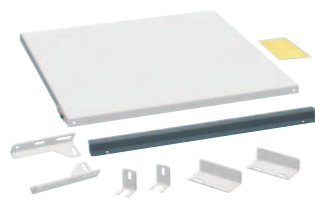
Optional Accessories (for MCO series)



Stacking Kits

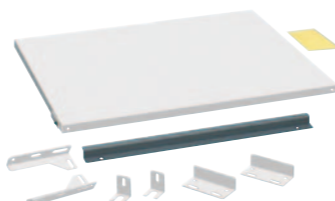
MCO-170PS-PW

Upper unit:
MCO-170AC series, MCO-170AIC series
MCO-170AICD series, MCO-170M series
Lower unit:
MCO-170AC series, MCO-170AIC series
MCO-170AICD series, MCO-170M series
Upper unit:
MCO-230AIC series
Lower unit:
MCO-230AIC series
Upper unit:
MCO-50M, MCO-50AIC series
Lower unit:
MCO-50M, MCO-50AIC series



MCO-170SB-PW

Upper unit:
MCO-170AC series, MCO-170AIC series
MCO-170AICD series, MCO-170M series
Lower unit:
MCO-20AIC series, MCO-19AIC series
MCO-19M series, MCO-18AC series



MCO-230SB-PW

Upper unit:
MCO-170AC series, MCO-170AIC series
MCO-170AICD series, MCO-170M series
Lower unit:
MCO-230AIC series
Upper unit:
MCO-230AIC series
Lower unit:
MCO-230AIC series

MCO-50SB-PW

Upper unit:
MCO-50M, MCO-50AIC series
Lower unit:
MCO-5M, MCO-5AC series

Roller Bases



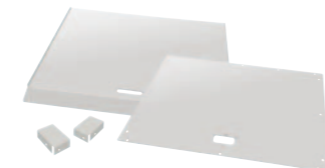
MCO-230RB-PW
[for MCO-230AIC series]



MCO-170RB-PW
[for MCO-170AIC series
MCO-170AICD series
MCO-170AC series
MCO-170M series]

MCO-50RB-PW
[for MCO-50AIC series
MCO-50M series]

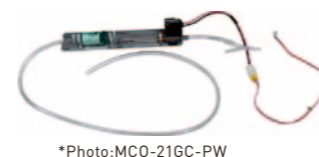
Roller Bottle Rack



MCO-80RBS-PW
[for MCO-80IC]

Other Options (for MCO series)

CO₂ Gas Tank Switcher



MCO-50GC-PW
[for MCO-50AIC series, MCO-50M series]
MCO-80GC-PW
[for MCO-80IC]

MCO-216C-PW
[for MCO-170AIC series
MCO-170AICD series, MCO-230AIC series
MCO-170AC series, MCO-170M series]

MCO-216CP-PW
[for MCO-170AIC series
MCO-170AICD series, MCO-230AIC series
MCO-50AIC series, MCO-170AC series
MCO-170M series]

Gas Regulator



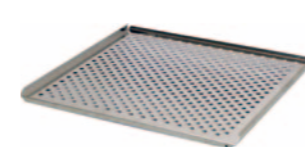
MCO-010R-PW
[except for MCO-80IC]

STD Gas Auto Calibration Kit

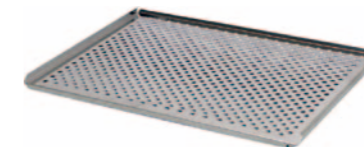


MCO-SGP-PW
[for MCO-170AIC series
MCO-170AICD series
MCO-230AIC series, MCO-170M series]

Tray (same as the standard accessory)



MCO-170ST-PW
[for MCO-170AIC series, MCO-170AICD series
MCO-170AC series, MCO-170M series]



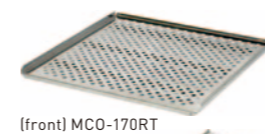
MCO-230ST-PW
[for MCO-230AIC series]



MCO-80ST-PW
[for MCO-80IC]

MCO-50ST-PW
[for MCO-50AIC series
MCO-50M series]

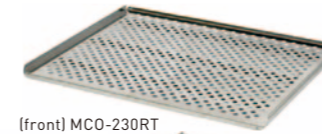
Tray (Reinforced Tray)



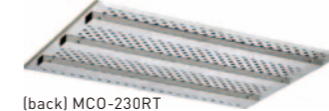
(front) MCO-170RT



(back) MCO-170RT



(front) MCO-230RT

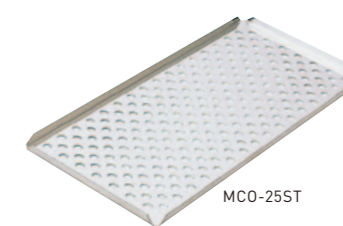


(back) MCO-230RT

MCO-170RT-PW
[for MCO-170AIC series, MCO-170AICD series
MCO-170AC series, MCO-170M series]

MCO-230RT-PW
[for MCO-230AIC series]

Half Tray



MCO-25ST

MCO-25ST-PW
[for MCO-170AIC series
MCO-170AICD series, MCO-170AC series
MCO-170M series]

MCO-35ST-PW
[for MCO-230AIC series]

UV System Set*1



*Photo: MCO-170UVS-PE/PA

MCO-170UVS-PE*2/PA*3
[for MCO-170AIC, MCO-170AICL, MCO-230AIC
MCO-230AICL, MCO-50AIC, MCO-50AICL
MCO-170AC series, MCO-170M series, MCO-50M]
MCO-170UVSD-PE
[for MCO-170AICD series]



MCO-80UVS-PE*2/PK
[for MCO-80IC]

H₂O₂ Decontamination Control Board



*Photo: MCO-170HB-PE/PA

MCO-170HB-PE*2/PA*3
[for MCO-170AIC, MCO-170AICL, MCO-170AICUV, MCO-170AICUVL
MCO-230AIC series, MCO-170M series]
MCO-50HB-PW
[for MCO-50AIC, MCO-50AICL, MCO-50M]

H₂O₂ Generator



MCO-HP-PW*5
[for MCO-170AIC series
MCO-230AIC series, MCO-170M series]
MCO-50HP-PW
[for MCO-50AIC series, MCO-50M series]

*Photo: MCO-HP-PW

Electric Door Lock



MCO-170EL-PW
[for MCO-170AIC, MCO-170AICL
MCO-170AICUV, MCO-170AICUVL
MCO-230AIC series, MCO-50AIC series
MCO-170M series, MCO-50M]

Small Door



MCO-170ID-PW
[for MCO-170AIC series
MCO-170AC series]



MCO-80ID-PW
[for MCO-80IC]

Auto Water Supply System



MCO-80AS-PW
[for MCO-80IC]

H₂O₂ Reagent



MCO-H202-PV
[for MCO-HP-PW]
MCO-5H202-PV
[for MCO-50AIC series
MCO-50M]

*Photo: MCO-H202-PV

Interface Board*4

MTR-L03-PW or MTR-480-PW

Interface Board (4-20 mA Transmitter)

MCO-420MA-PW
[for MCO-170AIC series, MCO-170AICD series, MCO-230AIC series
MCO-50AIC series, MCO-170AC series, MCO-170M series
MCO-50M series]

*1 MCO-170UVSD is equipped with MCO-170AICUVL/MCO-170AICUVL as standard.
MCO-170UVS is equipped with MCO-170AICUV/MCO-170AICUVL/MCO-170AICUVH/MCO-170AICUVHL and
MCO-230AICUV/MCO-230AICUVL as standard.
*2 For 220 V-240 V 50 Hz-60 Hz *3 For 110 V-120 V 60 Hz *4 Only for MTR-5000 [data acquisition system] users.

*5 The optional components UV system set, MCO-170UVS, and H2O2 decon board,
MCO-170HB must be attached to the unit in order to add the H2O2 decontamination
function, except MCO-170AICUVH/MCO-170AICUVHL

MIR Cooled Incubators

All-round performance

-10°C to 60°C



Model No.	MIR-154	MIR-254	MIR-554
Temperature Control Range	-10°C to 60°C (AT 5°C to 35°C)		
Interior Volume	123 litres	238 litres	406 litres
External Dimensions (W x D x H)*	700 x 580 x 1018 mm	700 x 580 x 1618 mm	800 x 832 x 1810 mm
Internal Dimensions (W x D x H)	620 x 368 x 555 mm	620 x 368 x 1088 mm	640 x 550 x 1160 mm
Net Weight (Approx.)	78 kg	108 kg	195 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

MIR Heated Incubators

Intuitive and easy operable Heated Incubators

Ambient temp. +5°C to 60°C (AT 0 to 20°C)
 Ambient temp. +5°C to 80°C (AT 20 to 35°C)



Model No.	MIR-H163	MIR-H263
Temperature Control Range	Ambient temp. +5°C to 60°C (AT 0°C to 20°C), Ambient temp. +5°C to 80°C (AT 20°C to 35°C)	
Interior Volume	93 litres	153 litres
External Dimensions (W x D x H)*	580 x 595 x 820 mm	730 x 645 x 870 mm
Internal Dimensions (W x D x H)	450 x 460 x 450 mm	600 x 510 x 500 mm
Net Weight (Approx.)	50 kg	67 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections.

0°C to 50°C (Lamp OFF)
 10°C to 50°C (Lamp ON)

MLR Climate Chambers

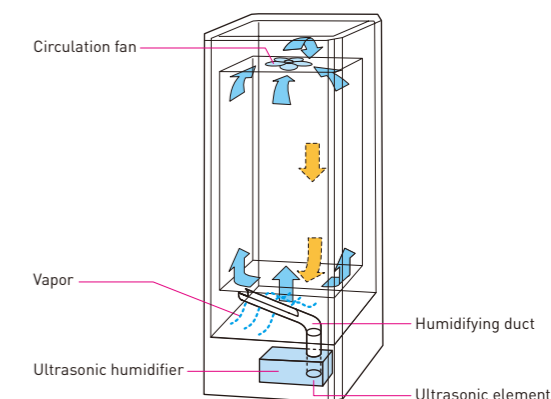
Versatile Climate Chambers



Model No.	MLR-352	MLR-352H
Temperature Control Range	0°C to 50°C (Light OFF) 10°C to 50°C (Light ON)	5°C to 50°C (Light OFF) 10°C to 50°C (Light ON)
Humidity Control Range	—	60 to 90 % RH (Light OFF) 55 to 85 % (Light ON)
Interior Volume	294 litres	
External Dimensions (W x D x H)*	760 x 700 x 1835 mm	
Internal Dimensions (W x D x H)	520 x 490 x 1135 mm	
Net Weight (Approx.)	226 kg	235 kg

* External dimensions of main cabinet only - see dimension drawings on flyers showing handles and other external projections. H: Humidifier type

Humidity control function (only for H type)
 suited for raising plants



This holds an ultrasound humidifier controlled by a PID controller, making it able to control the humidity of an area of 60 — 90% RH (fluorescent light off). Furthermore, it is able to humidify the chamber with the L-shaped humidifying pipe installed at the bottom of the chamber.

Optional Accessories (for MIR and MLR series)

Additional Illumination Kit	Stacking Kit	Inner Door	Blackout Panels	Hasp Lock Kit
MIR-L15-PK*1 (15W x 3 pcs. Fluorescent) MIR-L15-PE*2 MIR-L15-PA*3 (for MIR-154, MIR-254, MIR-554)	MIR-S154SB-PW (for MIR-154, MIR-254)	MIR-551D-PW (for MIR-554)	MIR-154BP-PW (for MIR-154) MIR-254BP-PW (for MIR-254)	MIR-LP-PW (for MIR-154, MIR-254)

Interface Board*4
 MTR-L03-PW or MTR-480-PW
 (for MLR-352, MLR-352H)

*1 For 220 V 60 Hz
 *2 For 220 V—240 V 50 Hz—60 Hz
 *3 For 110 V—120 V 60 Hz
 *4 Only for MTR-5000 (data acquisition system) users.





* Not all products are available in all countries. Please inquire at the closest dealer for more information

* The information contained in this brochure is as of September 2021.

* Appearance and specifications are subject to change without notice

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