

E-7000

McDry™

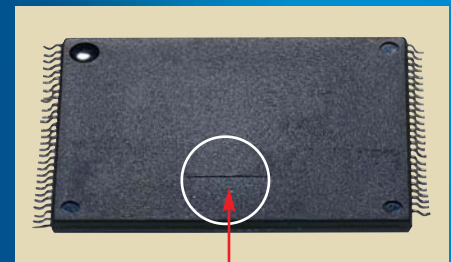
ULTRA-LOW HUMIDITY STORAGE CABINETS 1, 3%RH



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Prevent your components from micro-cracking during reflow with proper Ultra-Low Humidity Storage.



Micro-crack

Features

Conforms to IPC/JEDEC J-STD-033B Standard for Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices.

Conforms to IEC-61340-5-1 (ESD) Standard for Handling

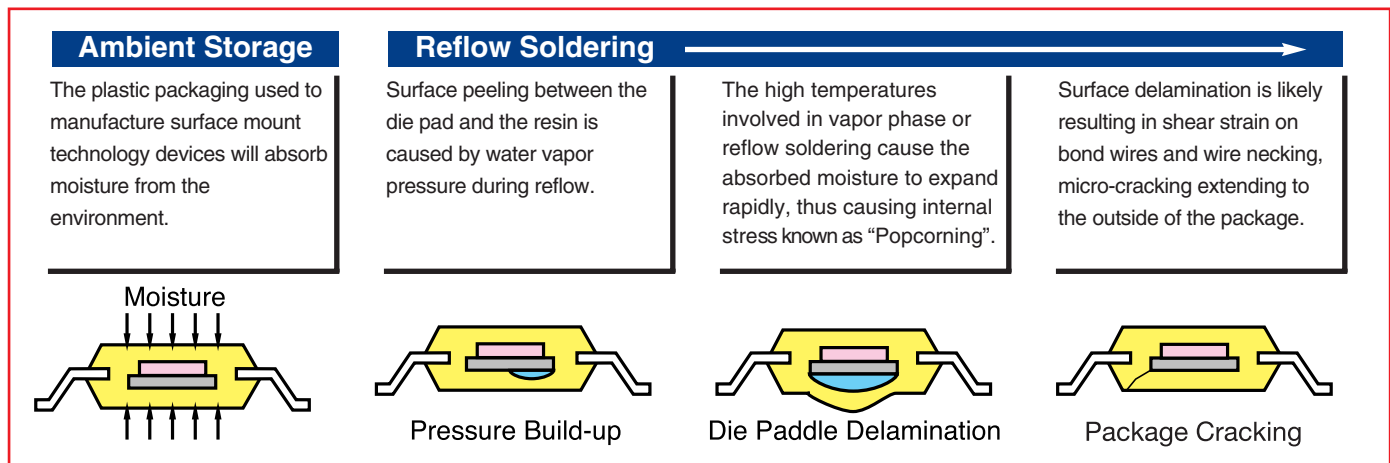
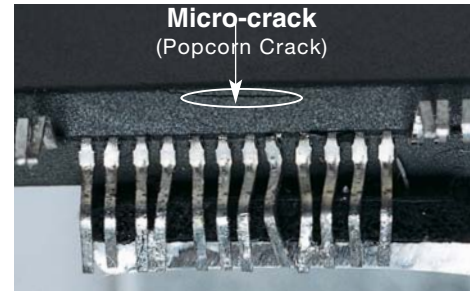
- Dehumidifies ICs to prevent micro-cracking and can be used as an alternative to baking
- DXU Model cabinets can maintain 1%RH
- Powerful moisture absorbent is utilized to eliminate the use of nitrogen
- No maintenance is required as moisture absorbent is automatically refreshed
- Cabinets are grounded to prevent static electricity
- Wide range of cabinet sizes available

Manufacturer  **ERC Co., Ltd.**

Why do components require low humidity storage?

McDry™ Prevents Micro-Cracking of IC Packages During Reflow.

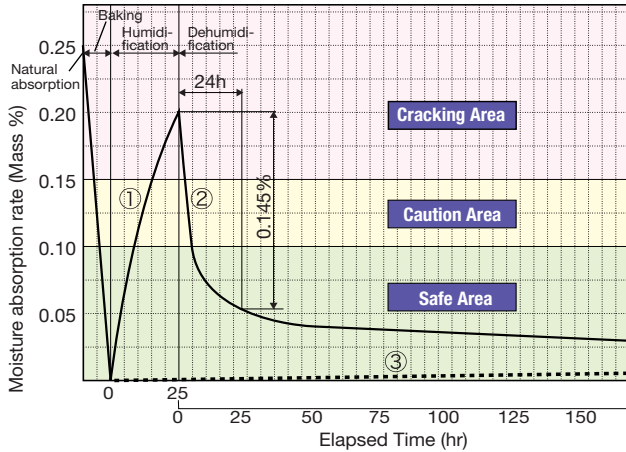
The high temperatures involved in vapor phase or reflow passes cause the absorbed moisture to expand rapidly. Micro-cracking occurs in nearly 100% of IC packages containing moisture during the reflow process. Occurring over an extended period of time, this can cause breakage of wiring and other problems. Micro-cracking can be prevented with storage and dehumidification of IC's using McDry™ as well as resetting the floor life of components according to the IPC/JEDEC J-Std 033b.



McDry Applications

- | | | | |
|---|--|---|--|
| <p>1 Low humidity storage of IC Packages (MSD) which have been removed from moisture barrier bags. (To stop the floor life clock of CSPs, BGAs, TQFPs, etc.)</p> <ol style="list-style-type: none"> 1) Low humidity storage of MSDs before and leftover after implementation. 2) Low humidity storage of MSDs that have been removed from mounter. 3) Low humidity storage of MSDs when writing ROMs. | | <p>5 Clean, room temperature drying of liquid crystal glass boards after washing. Results in even drying and prevents contamination.</p> | |
| <p>2 Drying and storing multilayer PC boards before and after mounting.</p> | | <p>6 Dry storage of quartz crystals and electrode adhesives used in the manufacturing of quartz oscillators.</p> | |
| <p>3 Dry storage of pattern film and prepreg used in the manufacturing of PCBs.</p> | | <p>7 Drying and storing of fiber optics (Micro-lens for WDM) and CCD (Solid-state image sensor.)</p> | |
| <p>4 Dry storage of semi-mounted PCBs. Effective low humidity storage of PCBs awaiting second-side reflow.</p> | | <p>8 Low humidity storage of electronic components to slow down oxidation.</p> | |

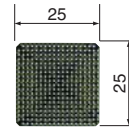
Absorption and Dehumidification Data of IC Packages



PBGA

Test Sample: PBGA
Pretreatment: Baked at 125°C, 24hrs.

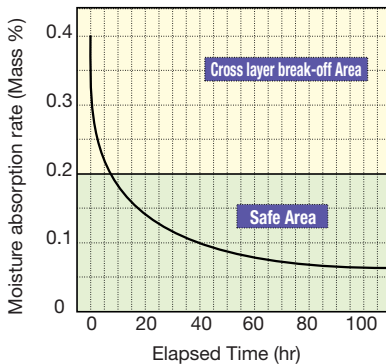
Thickness 1.8 mm



Conditions

1. Package is stored in simulated room conditions (30°C, 85% RH, 24 hours).
A controlled temperature, humidity chamber is used.
2. After Process 1 above has been completed, the package is stored in a low humidity storage case for 100 hrs at 5% RH.
3. After the baking process the package is stored in a low humidity storage case at 5% RH.

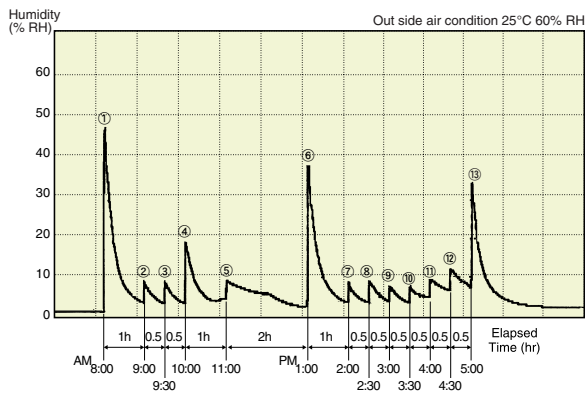
Low Humidity Storage of Thin Multi-Layer PCBs



Multi-layered PCBs absorb moisture at a faster rate as they become thinner. Layer break off and blistering will occur during reflow if the moisture content of the PCB exceeds 0.2% (weight).

Test Sample: 6 layer Glass Epoxy PCB
Size: 50 x 100 x 1t (mm)
Pre-Treatment: Baked for 24 hours @ 125°C
Humidification: Steamed for 2 hours
De-Humidification: Stored in McDry™ Cabinet @ 5%RH

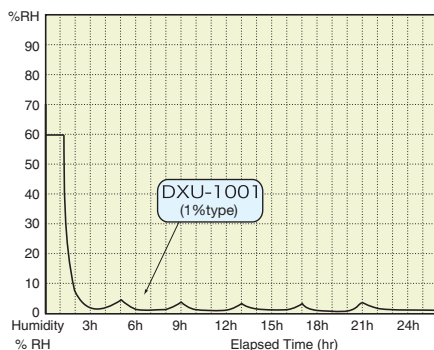
Opening-Closing Data of DXU-1001



The door opening place and time

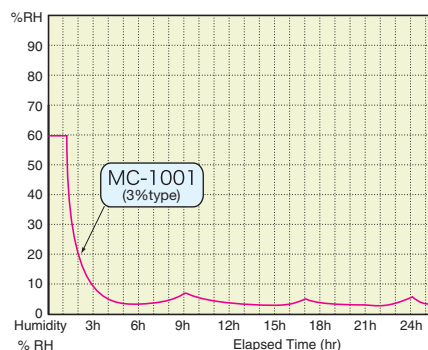
- No. ①...4doors(A)(B)(C)(D) ...2 min. open all
No. ②⑤⑦⑨⑩⑪⑫...1door(A) ...20 sec. open
No. ③⑧...1door (A) ...30 sec. open
No. ④...2doors (A)(B) ...30 sec. both open
No. ⑥...2doors (A)(B) ...2 min. both open
No. ⑬...2doors (A)(B) ...1 min. both open

Humidity Data of McDry Cabinets



Test Conditions:
25°C
60% RH

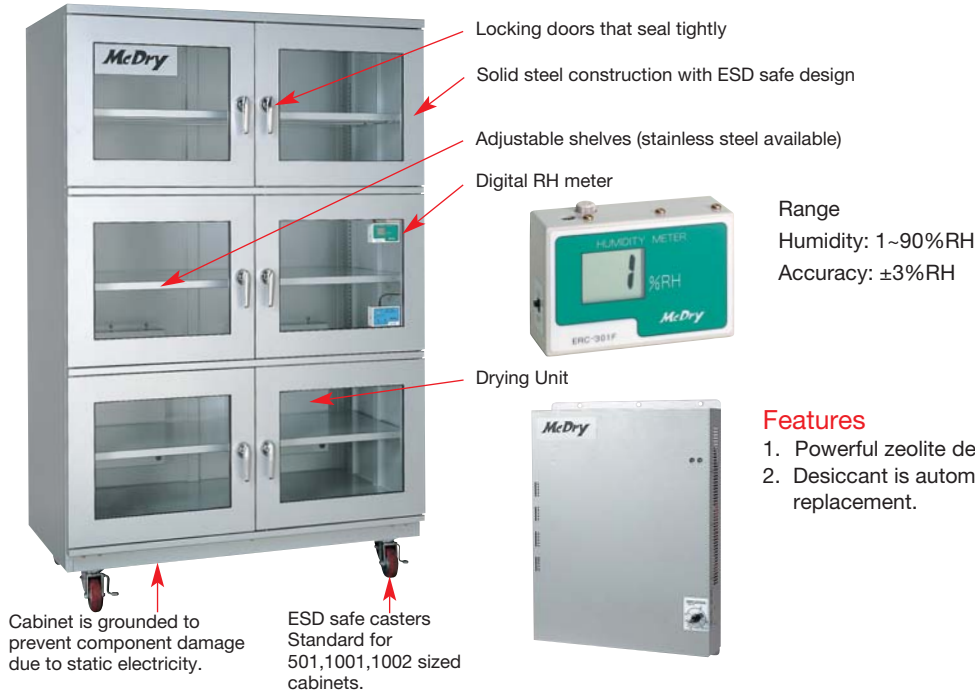
DXU-1001
(1% RH Model):
Internal RH



Test Conditions:
25°C
60% RH

MC-1001
(3% Model):
Internal RH

Manufactured for High Performance



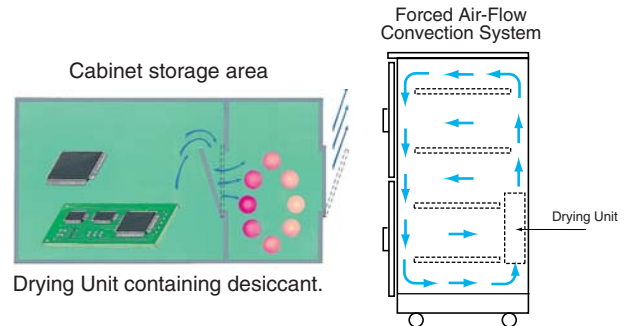
Features

1. Powerful zeolite desiccant eliminates the need for nitrogen.
2. Desiccant is automatically recycled and does not require replacement.

Dehumidifying Principle

Dehumidifying Principle

McDry™ Electronic Drying Storage Cases provide low humidity storage without the use of nitrogen. Humidity is removed from the cabinets by use of a powerful zeolite desiccant. The desiccant is automatically recycled with a heating mechanism and does not require replacement. Moisture absorbed by the zeolite desiccant is vaporized and released outside of the cabinet. Memory shaped metal is utilized for fail proof ventilation. Forced air-flow convection system desiccates the entire cabinet without requiring the use of a fan for optimal dehumidification to take place.



Handling and Storage Guidelines of IC Packages

Storing in 5% RH and 10% RH storage cabinets in accordance with IPC/JEDEC J-STD 033B

In accordance with IPC/JEDEC J-STD-033B, IC packages that have been removed from MBBs must be kept under a condition of 5% or 10% relative humidity to prevent components from absorbing moisture. However, during the mounting process, opening and closing of dry cabinet storage doors may occur frequently in order to remove and replace moisture-sensitive devices. This will allow ambient air to flow into the cabinet and may raise the RH level. To limit this from occurring and to keep the relative humidity inside of the cabinet below 5% or 10% as specified, a consistent, ultra-low humidity storage level is recommended. Therefore, the storage guidelines utilizing the McDry™ cabinet corresponding to the repetition of door opening and closing of doors are as follows:

Model	RH level	Frequency of opening-closing of doors	Usage example
DXU models	1% RH	Once in approx. 20 – 40 mins.	<ol style="list-style-type: none"> 1. Ultra-low humidity storage of IC's for cabinets that are accessed frequently. 2. Storage of IC packages that require ultra-low humidity storage such as components with high MSL classifications.
MCU models	3% RH	Once in approx. 1 hr – 2 hrs.	<ol style="list-style-type: none"> 1. Ultra-low humidity storage of IC's for cabinets that are not accessed frequently. 2. Long-term storage of IC packages and electrical components. 3. Storage of PCBs, etc.

DXU Model 1%RH

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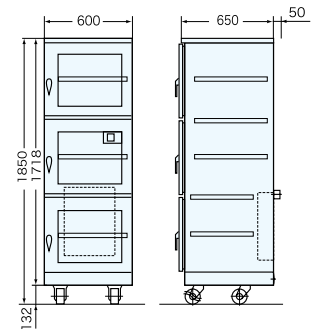
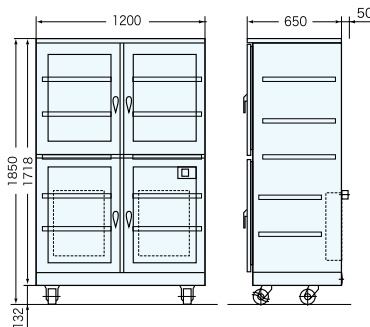
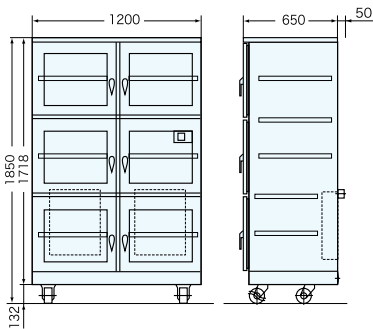
1200 ℓ
DXU-1001



1200 ℓ
DXU-1002



600 ℓ
DXU-501



Specifications (Note: Specifications are subject to change due to product improvement.)

ITEM	MODEL	DXU-1001	DXU-1002	DXU-501
External Dimensions		47.24W x 27.56D x 72.83H (in) 1200W x 700D x 1850H (mm)	47.24W x 27.56D x 72.83H (in) 1200W x 700D x 1850H (mm)	23.62W x 27.56D x 72.83H (in) 600W x 700D x 1850H (mm)
Internal Dimensions		45.28W x 23.62D x 66.93H (in) 1150W x 600D x 1700H (mm)	45.28W x 23.62D x 66.93H (in) 1150W x 600D x 1700H (mm)	21.65W x 23.62D x 66.93H (in) 550W x 600D x 1700H (mm)
Capacity		Approx 42.372 Cu Feet (1200 Liters)	Approx 42.372 Cu Feet (1200 Liters)	Approx 21.866 Cu Feet (600 Liters)
Dry Unit		US-7200 x 2	US-7200 x 2	US-5000
Material		Bonderized steel with melamine coating	Bonderized steel with melamine coating	Bonderized steel with glass windows
Color		Silver	Silver	Silver
Doors (Magnetic)		6 Doors with glass windows	4 Doors with glass windows	3 Doors with glass windows
Weight		Approx 440 lbs. (200 kgs.)	Approx 419 lbs. (190 kgs.)	Approx 243 lbs. (110 kgs.)
Electrical Requirement		AC 120V (50/60Hz) Max 500W	AC 120V (50/60Hz) Max 500W	AC 120V (50/60Hz) Max 370W
Accessories Included		Casters, RH Meter, 5 shelves	Casters, RH Meter, 5 shelves	Casters, RH Meter, 5 shelves

Features

1. Can maintain an RH level of 1%RH
2. Equipped with a digital RH Meter
3. Locking Doors
4. Shelves are adjustable and can hold 220lbs. (100kgs.)
5. Grounded to prevent static electricity

MCU Model 3%RH



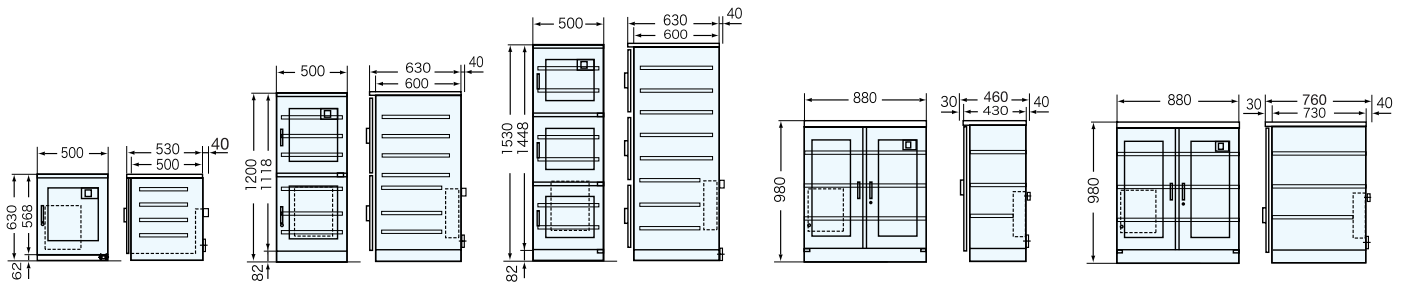
MCU-201
135 ℓ

MCU-301
300 ℓ

MCU-401
420 ℓ

MCU-340
300 ℓ

MCU-580
520 ℓ



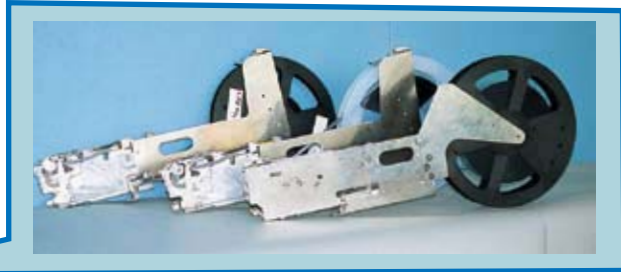
Features

1. Can maintain an RH level of 3%
2. Equipped with a digital RH Meter
3. Locking Doors
4. Adjustable shelves
5. Loading capacity
MCU-201,301,340,580: 110lbs. (50kgs.)
6. Grounded to prevent static electricity

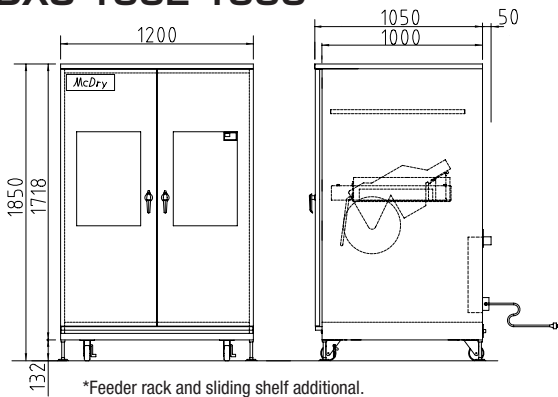
Specifications (Note: Specifications are subject to change due to product improvement.)

ITEM	MODEL	MCU-201	MCU-301	MCU-401	MCU-340	MCU-580
External Dimensions		19.69W x 20.87D x 24.80H (in) 500W x 530D x 630H (mm)	19.69W x 24.80D x 47.24H (in) 500W x 630D x 1200H (mm)	19.69W x 24.80D x 60.24H (in) 500W x 630D x 1530H (mm)	34.65W x 18.11D x 38.58H (in) 880W x 460D x 980H (mm)	34.65W x 31.50D x 38.58H (in) 880W x 800D x 980H (mm)
Internal Dimensions		18.90W x 19.69D x 21.26H (in) 480W x 500D x 540H (mm)	18.90W x 19.69D x 42.52H (in) 480W x 600D x 1080H (mm)	18.90W x 19.69D x 55.51H (in) 480W x 600D x 1410H (mm)	33.86W x 16.93D x 33.07H (in) 860W x 430D x 840H (mm)	33.86W x 28.74D x 33.07H (in) 860W x 730D x 840H (mm)
Capacity		Approx 4.767 Cu Feet (135 Liters)	Approx 10.946 Cu Feet (310 Liters)	Approx 14.124 Cu Feet (400 Liters)	Approx 10.593 Cu Feet (300 Liters)	Approx 18.361 Cu Feet (520 Liters)
Dry Unit		US-3200	US-4000	US-4000	US-4000	US-5000
Material		Bonderized steel with melamine coating	Bonderized steel with melamine coating	Bonderized steel with melamine coating	Bonderized steel with melamine coating	Bonderized steel with melamine coating
Color		Ivory	Ivory	Ivory	Ivory	Silver
Doors (Magnetic)		1 Door with glass window	2 Doors with glass windows	3 Doors with glass windows	2 Doors with glass windows	2 Doors with glass windows
Weight		Approx 66 lbs. (30 kgs.)	Approx 132 lbs. (60 kgs.)	Approx 154 lbs. (70 kgs.)	Approx 128 lbs. (58 kgs.)	Approx 176 lbs. (80 kgs.)
Electrical Requirement		AC 120V (50/60Hz) Max 140W	AC 120V (50/60Hz) Max 250W	AC 120V (50/60Hz) Max 250W	AC 120V (50/60Hz) Max 250W	AC 120V (50/60Hz) Max 370W
Accessories Included		RH Meter, 4 shelves	RH Meter, 8 shelves	RH Meter, 8 shelves	RH Meter, 3 shelves	RH Meter, 3 shelves

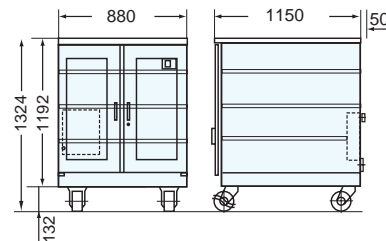
FEEDER BANK 1%RH, 2%RH



DXU-1002-1000



DXU-580SF
(Ergonomic Model)



Specifications (Note: Specifications are subject to change due to product improvement.)

ITEM	MODEL	DXU-1002-1000	DXU-580SF
External Dimensions		47.24W x 43.36D x 72.83H (in) 1200W x 1100D x 1850H (mm)	35.65W x 47.24D x 52.17H (in) 880W x 1200D x 1325H (mm)
Internal Dimensions		45.28W x 39.37D x 66.93H (in) 1150W x 1000D x 1700H (mm)	32.86W x 43.31D x 31.07H (in) 830W x 1100D x 840H (mm)
Capacity		Approx 67.090 Cu Feet (1900 Liters)	Approx 31.779 Cu Feet (900 Liters)
Dry Unit		US-7200 x 2	US-5000 x 2
Material		Bonderized steel with melamine coating	Bonderized steel with melamine coating
Color		Silver	Ivory
Doors (Magnetic)		2 Doors with glass windows	2 Doors with glass windows
Weight		Approx 594 lbs. (270 kgs.)	Approx 1980 lbs. (900 kgs.)
Electrical Requirement		AC 120V (50/60Hz) Max 740W	AC 120V (50/60Hz) Max 740W
Accessories Included		Casters, RH Meter, 5 shelves	RH Meter, 1 shelf

Features

1. Can maintain an RH level of 1% or 2%
2. Equipped with a digital RH Meter
3. Locking Doors
4. Shelves are adjustable and can hold 220 lbs. (100 kgs.)
5. Grounded to prevent static electricity

MC Model 3%RH



1200ℓ
MC-1001



1200ℓ
MC-1002

Specifications (Note: Specifications are subject to change due to product improvement.)

Item	Model	MC-1001	MC-1002
External Dimensions		47.24W x 27.56D x 72.83H (in) 1200W x 700D x 1850H (mm)	47.24W x 27.56D x 72.83H (in) 1200W x 700D x 1850H (mm)
Internal Dimensions		45.28W x 23.62D x 66.93H (in) 1150W x 600D x 1700H (mm)	45.28W x 23.62D x 66.93H (in) 1150W x 600D x 1700H (mm)
Capacity		Approx 42.372 Cu Feet (1200 Liters)	Approx 42.372 Cu Feet (1200 Liters)
Dry Unit		US-5000	US-5000
Material		Bonderized steel with melamine coating	Bonderized steel with melamine coating
Color		Silver	Silver
Doors(Magnetic)		6 Doors with glass windows	4 Doors with glass windows
Weight		Approx 419 lbs. (190 kgs.)	Approx 396 lbs. (180 kgs.)
Electrical Requirement		AC 120V (50/60Hz) Max 370W	AC 120V (50/60Hz) Max 370W
Accessories Included		Casters, RH Meter, 5 shelves	Casters, RH Meter, 5 shelves

Features

1. Can maintain an RH level of 3%
2. Equipped with a digital RH Meter
3. Locking Doors
4. Shelves are adjustable and can hold 220lbs. (100kgs.)
5. Grounded to prevent static electricity

Agent



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