

Environmentally Friendly Freeze Dryer with Natural Refrigerant

Non-fluorocarbon freeze dryers have the following advantages

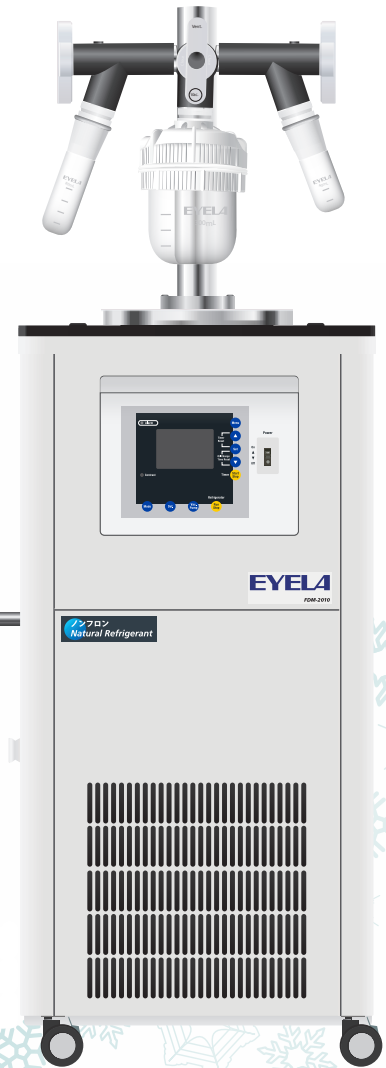


Less administrative and inspection tasks

Contribute to curbing global warming

Less disposal cost

Non-fluorocarbon freeze dryer
Model FDM-2010



Vacuum pump

Manifold/
Dry chamber

Freeze dryer
(trap part)

This is a unit-type freeze dryer that can be combined with optional manifolds and drying chambers to configure a variety of freeze-drying systems according to your requirement.

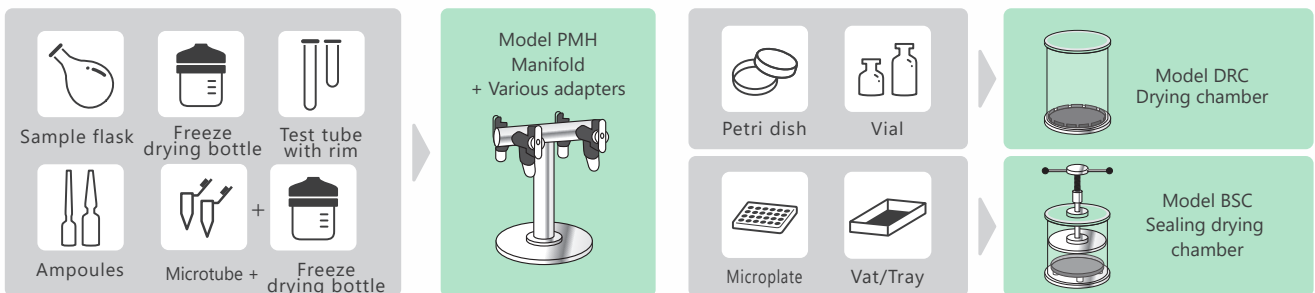
Model FDM-2010 is a unit-type freeze dryer.

Step 1: Select the **main unit of freeze dryer** based on the dehumidifying volume and cold trap temperature.

Step 2: Select the optional **manifold and chamber** according to the vessels to be used.

Step 3: Finally, select a **vacuum pump, hoses and other piping.**

Freeze drying can be performed in a variety of vessels, including freeze drying bottles, flasks, test tubes, ampoules, vials, petri dishes, microtubes, and microplates.





Non-fluorocarbon freeze dryer Model FDM-2010

This is for small sample sizes with a maximum dehydration capacity of 1 liter per batch. It achieves drying with low humidity levels due to freezing at -80°C, resulting in well-dried samples. With the cold trap chamber cooling, it allows for easy removal of ice during defrosting with hot gas, making cleaning simple. It complies with the RoHS directive.

Low temperature freeze drying system for small volumes

A system capable of freezing a large number of test tubes at once

System code: SYS10039

Dehumidifying volume: 1L/batch
Cold trap temperature: -80°C



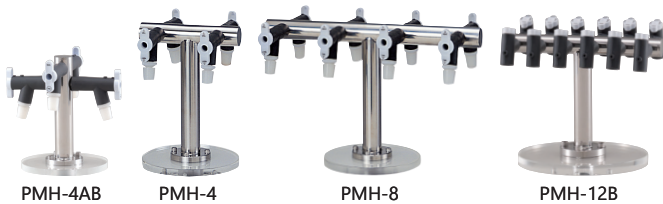
Click here for details on system configuration



Model	FDM-2010
Cat. No.	284710
Cooling method	Cold trap chamber cooling
Cold trap temperature	-80°C
Dehumidifying volume	1L / batch
Setting / Display	Flat keypad / Digital display
Safety functions	Leakage/earth leakage breaker, Refrigerator overload relay, Automatic vacuum release, Vacuum pump oil change warning function, Fuse for service outlet, Control board self-diagnostic function
Vacuum release function	Automatic vacuum release valve
Trap defrost	Defrosting by hot gas
Additional functions	Vacuum pump automatic control, Vacuum abnormality monitoring function, Stopwatch function, power failure recovery time selection function
Refrigerator / Refrigerant	Air-cooled power output 500W×2, R290/R170
Vacuum pump	Option: 50L/min or more
Trap thermometer	Digital display, Type T thermocouple sensor, Display accuracy: ±4°C
Vacuum gauge	Pirani vacuum gauge (digital display) 0.0 to 533Pa
Recorder output	Temperature: 1°C/1mV, Vacuum: 1Pa/mV
Service outlet	For vacuum pump max. 6A, for dry chamber max. 2A
Trap size / Material	153 ID x 225Hmm / Stainless steel
Suction port diameter	17.3mm OD
Ambient temperature range	5 to 35°C
Outer dimensions (mm) / Weight	450(487)W x 550D x 945H / Approx. 83kg
Power supply input / Voltage	10A, 1kVA 100VAC 50/60Hz

※Performance values are at room temperature of 20°C, rated power supply voltage, 50 Hz. ※Power input does not include the capacity of the service outlet. ※Dimensions in parentheses () include protrusions. ※Please prepare a primary power supply of 100VAC, 20A capacity. Power plug is not included.

Optional parts



※Please use the fixture to prevent the manifold from tipping over.
Model FDU-CRAMP2 Product code No.213810

Manifolds

Model	Number of ports	Adapter	Valve type	Autoclave	Cat. No.
PMH-4A	4	Φ29/38	Valve D	×	209560
PMH-4AB	4	Φ29/38	Valve DB	○	276060
PMH-4	4	Φ29/38	Valve D	×	119820
PMH-4B	4	Φ29/38	Valve DB	○	276050
PMH-8	8	Φ29/38	Valve D	×	119830
PMH-8B	8	Φ29/38	Valve DB	○	276070
PMH-12	12	Adapter is not included	Valve B	×	119840
PMH-12B	12		Valve CB	○	276080
PMH-24	24	Adapter is not included	Valve B	×	119860
PMH-24B	24		Valve CB	○	276090

Drying chambers

Model	Number of shelves	Shelf size(mm)	Control temp. range	Cat. No.
DRC-1N	2	200W x 230D	RT + 5 to 40°C	119730
DRC-2L	1	φ220	Fixed at 30°C	119750
DRC-3L	3	φ220		119770

Sealing drying chambers

Model	Number of shelves	Shelf size(mm)	Control temp. range	Cat. No.
BSC-2L	1	φ220	Fixed at 30°C	119790
BSC-3L	2	φ220		119810

1 Pre-freezer (Sample vessel rotation device) Model PFM-1000

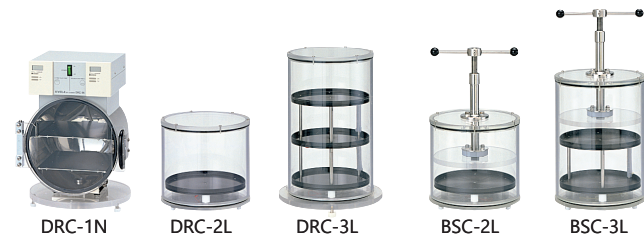
Applicable vessels: Sample flasks (Φ29/38), freeze drying bottles
Cat. No. 197420

2 Pre-freezing bath Model PFR-1000

Pre-freezing temperature: -45°C, Power supply/input: 220VAC 50Hz 4.6A
Cat. No. 197418

※Special attachments are required when using the freeze drying bottles.

Attachment for freeze-drying bottles	Cat. No.
3 For 600, 900, 1200mL	282170
For 150, 300mL	282160
4 For 40, 80mL	282150



Stainless steel vat for drying chamber

Stainless steel vats are available for installing a large number of small vials at once or easily adjust the number of vials to be installed.



Click here to see the digital catalog (left) and the video using the stainless steel vat (right).



For details on options and genuine parts, click here.

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※The appearance and specifications of the products are subject to change without notice.

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