

# MVE Eterne Series

-190°C Vapor Storage

There is a critical temperature for most biological samples that are cryopreserved. This temperature, known as the Glass Transition Temperature ( $T_g$ ), is widely accepted as being in the order of -130 to -135°C. The long term viability of frozen samples can be seriously compromised if stored above this temperature. Further, if they experience several transitions through the temperature, in either thermal direction additional deterioration may occur. It is important that the LN<sub>2</sub> freezer maintain a lower temperature, even during filling and sample retrieval cycles. This is much more likely to be achieved if the freezer maintains -190°C than if the system is at or near the critical temperature at normal equilibrium. Chart-MVE's approach to this problem was to improve the fundamental design of freezers used in vapor phase and to design and build a nitrogen vapor freezer which addresses the previous issues associated with storage in vapor.



## MVE ETERNE

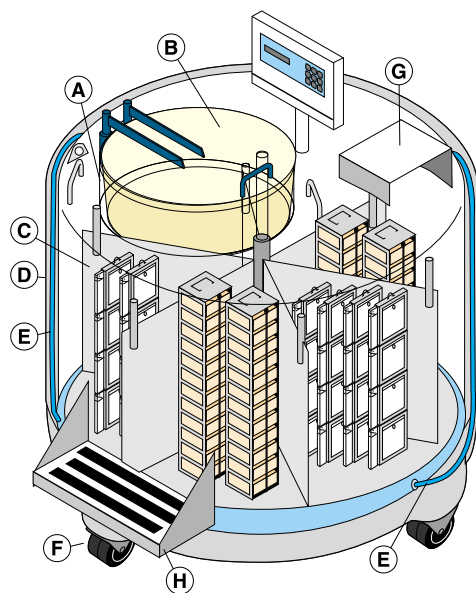
- The offset neck and free moving sample turn tray offer incredible user convenience and sample access. The single sample retrieval point is incredibly ergonomic compared to the reaching and stretching required with standard freezers.
- Specifically designed for vapor storage.
- Efficient thermal design ensures 95% of system surface area enclosed by vacuum - compare to typical 60% in standard freezers.
- Lowest sample temperature in the industry with minus 190°C. This ensures an increased safety margin below the Glass Transition Temperature and better long term sample viability in true vapor storage.
- Lowest liquid usage - LN<sub>2</sub> cost savings of up to 70% compared to standard storage units of equivalent capacity.
- No artificial aids required to lower and maintain temperature as with competitive tanks. Eterne achieves the lowest running cost/sample.
- Liquid reservoir below sample platform will typically maintain temperature for more than 20 days in vapor use.
- Validated to maintain temperature of samples for at least two hours with the lid removed.
- Compact design means highest number of vials stored per square foot of laboratory space.
- Differential pressure level measurement - seamless measurement is important in vapor systems as the LN<sub>2</sub> level is small range - typically 4 to 8 inches.
- Temperature measurement by RTD, the most accurate system available. 2 point calibration ensures compliance with GLP and GMP.

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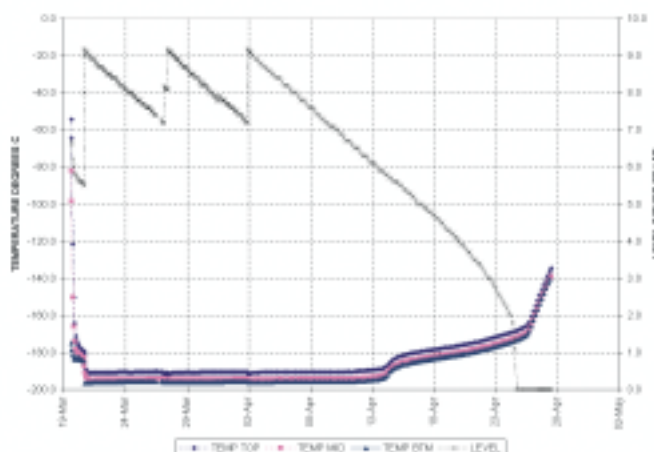
-190°C Vapor Storage

## Specifications

	MVE 810 Eterne	MVE1520 Eterne	MVE1830 Eterne
<b>UNIT DIMENSIONS</b>			
LN2 Capacity (Liters)	370	756	1672
LN2 Capacity Under Platform (L)	52	133	296
Neck Opening (In/mm)	12.5 / 317	17.5 / 444.5	25 / 635
Useable Internal Height (In/mm)	27.5 / 698	28.6 / 726.4	28.6 / 726.4
Inner Diameter (In/mm)	28.7 / 729	38.5 / 977.9	56.3 / 1422.4
Overall Height (In/mm)	47.3 / 1202	53.2 / 1351	63.3 / 1608
Outer Diameter (In/mm)	32 / 812.8	42 / 1066.8	60 / 1524
Weight Empty (Lbs/Kg)	475 / 216	750 / 341	1500 / 681
<b>UNIT CAPACITIES - VIALS</b>			
1.2 & 2 ml Vials (Internally Threaded)			
Number of Racks (100 cell boxes)	12	24	54
Number of Racks (25 cell boxes)	4	12	30
Number of Stages per Rack	12	13	13
<b>Total Vial Capacity</b>	<b>15,600</b>	<b>33,800</b>	<b>79,950</b>



- A Offset neck design to maintain -190°C in vapor storage and provide low liquid nitrogen consumption with standard racks
- B Durable aluminum lid - designed for longer life
- C Rotating interior tray provides easy access to cryobiological samples
- D Low Maintenance, all-stainless steel construction
- E Annular filling lines reduces frost and ice formation near lid
- F Super-tough, durable casters
- G Rack Stand
- H Step-up platform (MVE 1520 ETERNE, 1830 ETERNE)



**TWO Year Standard Warranty**  
**FIVE Year Vacuum Warranty**

**Conforms to MDD 93/42/EEC, the Medical Device Directive for the EU.**

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