

# HE SERIES -190°C

## *High Capacity High Efficiency Freezer*

**- Long Term Storage Solutions for Biological Materials**

### **Capacity & Storage**

- Capacity range: 19,500 - 120,000 vials
- Dual storage mode: LN<sub>2</sub> Vapor, or LN<sub>2</sub> Liquid

### **Safety & Compliance**

- Automated LN<sub>2</sub> level control with overflow protection
- Independent temperature probes for accurate, real-time monitoring
- 300 series stainless-steel construction for durability and hygiene

### **User-Friendly Operation**

- Intuitive 7" touchscreen HMI with remote monitoring
- Convenience access: turntable with marked sections, hinged lids, and foldable steps
- Auto-defog system for clear visibility during access



# HE Series -190 Freezer



Engineered for high-capacity, long-term storage of up to **120,000 1.2 / 2.0 ml vials**, the CSM HE Series combines maximum density with the industry's **longest LN<sub>2</sub> hold time**.

Built with superior vacuum insulation and stainless-steel durability, it delivers stable, reliable performance in even the most demanding environments.

With decades of expertise in cryogenic engineering and super insulation technology, Cryogenic Specialty Manufacturing provides condensation-free LN<sub>2</sub> solutions trusted by the biotech, biomedical and research industries worldwide.

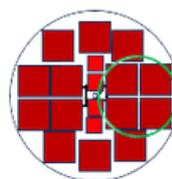
**Features include:**

- Dry sample storage
- -190°C top box storage
- Lowest liftover height (2.1 m)
- Largest LN<sub>2</sub> capacity below turn tray
- Two tier folding step

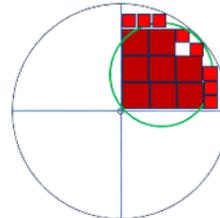


Square Rack Layouts

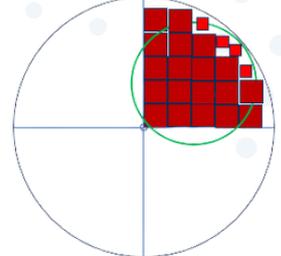
HE20



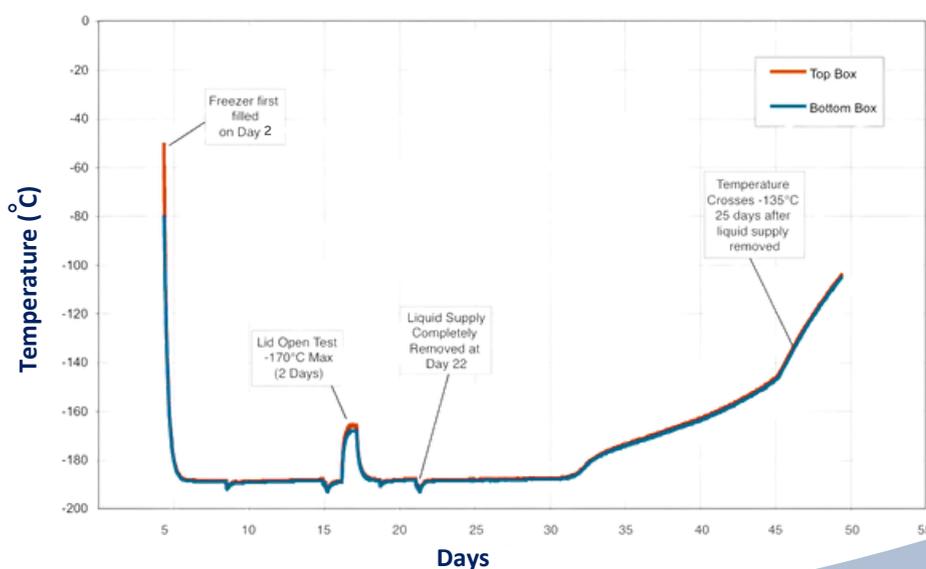
HE48/60



HE104/120



## Temperature Performance





# GENERAL SPECIFICATIONS

HE Model	HE20	HE48	HE60	HE104	HE120
LN <sub>2</sub> Vapor Capacity	67	157	157	362	362
LN <sub>2</sub> Liquid Capacity	433	912	1014	1782	1987
Outer Diameter, in (mm)	34 (864)	51.2 (1301)	51.2 (1301)	67.5 (1715)	67.5 (1715)
Outer Height, in (mm)	57 (1448)	55.3 (1405)	63.3 (1608)	62.5 (1588)	66.83 (1697)
Neck Opening, in (mm)	14 (356)	22 (559)	22 (559)	30 (762)	30 (762)
Carousel ID, in (mm)	30 (762)	46 (1169)	46 (1169)	63 (1601)	63 (1601)
Internal Height, in (mm)	30 (762)	30 (762)	34.3 (871)	30 (762)	34.3 (871)
Weight Empty, lbs (kg)	630 (286)	914 (416)	930 (422)	1782 (810)	1811 (823)
Weight Full, lbs (kg)	750 (340)	1196 (543)	1210 (549)	2391 (1130)	2520 (1143)
Evaporation Rate (L/day)	5	7	7	13	13
Static Holding Time (days)	10	18	18	25	25
Capacity (2 ml Vials)	19,500	480,000	600,000	104,000	120,000
Large Racks (Rack/Level) <small>100 cell boxes</small>	14/13	32/12	32/15	76/13	76/15
Small Racks (Rack/Level)	4/13	32/12	32/15	16/13	16/15



**Materials and Workmanship: 2-years Warranty**  
**Vacuum: 5-years Warranty**



## A QUICK TAKE ON US

**Cryogenic Specialty Manufacturing (CSM)** is a leading designer and manufacturer of precision cryogenic systems and components, tailored for the biobanking, cell therapy, biotechnology, and research applications.

Established in 1997 with expertise in **Cryogenic System Engineering**, and further expanded into **Super Insulation Technology** in 2014, we provide condensation-free liquid nitrogen solutions that ensure sample integrity in even the most extreme storage conditions.

Our cryogenic innovations in stable ultra-low temperature storage enable the safe preservation of biological specimens, clinical samples, and high-value research materials, safeguarding viability for years - or decades. From high-capacity vapor-phase freezers to advanced monitoring and automation, CSM empowers laboratories, hospitals, and research institutions to achieve maximum reliability, efficiency, and compliance in their cryopreservation operations.



● Global Sales & Technical Support

### Manufacturing

CSM's 12,000 m<sup>2</sup> smart factory embodies our commitment to high-efficiency manufacturing and environmental sustainability.

- ✓ Green Manufacturing for sustainability
- ✓ Cutting-Edge Automation for precision and productivity
- ✓ ISO 9001 and 14001 certified

By integrating quality and innovation with sustainability, we deliver superior product performance while minimizing environmental impact!

