



TESCOR

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-70C FREEZERS

Tescor manufactures customized low temperature freezers that are used for bulk storage of pharmaceutical products. Tescor has utilized its experience in refrigeration and air conditioning technologies to manufacture chambers which can maintain -70°C (-94°F) on a continuous basis.

The Tescor freezer is configured to have a -20°C corridor with identical -70°C freezer compartments on both sides. The freezer can also be configured to include a $+4^{\circ}\text{C}$ Ante-room to help prevent moisture migration to freezer section.



□ *Features of -70C Freezers*

- -20°C Corridor
- -70°C Side Freezer Compartments
- Dry Air Purge to maintain -70°C dewpoint or less
- Primary and Backup Control Systems
- Room and Equipment Safeties
- Man in the Box Alarm
- LN_2 Emergency Backup System
- Double Wall Construction to eliminate condensation on exterior of Room
- A number of interior and exterior finishes are available for the freezer room
- 3" diameter Validation Port for instrumentation on side of corridor
- Multi-circuited Fan Coil unit for Corridor Conditioning
- Redundant Gravity DX coils in Freezers
- Redundant Cascade Refrigeration Systems (Available in air-cooled or water-cooled)
- Turn-key installation by Tescor personnel.

□ *Advantages of Walk-In Freezers*

- A typical Tescor walk-in -70°C freezer measuring 16' (w) x 26' (l) x 11' (h) with 10 doors will replace approximately 30 Upright or Chest Freezers
- Single Point Utility Connections
- Lower Utility Costs by 50% or more
- No HVAC System Upgrades Required to Building
- Less floor space required
- Lower maintenance requirements
- High Reliability of Redundant Systems
- No Frost Accumulation on Stored Product



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-70°C Freezer Room
Typical Specifications

- ❑ **Temperature Range:**
 - -20°C : center compartment
 - -70°C : side compartments
- ❑ **Temperature Control Stability**
 - Freezer: $\pm 0.5^{\circ}\text{C}$
 - Corridor: $\pm 1^{\circ}\text{C}$
- ❑ **Temperature Uniformity**
 - $\pm 2.5^{\circ}\text{C}$ in Freezer. Measurements will be made 12" away from the interior room walls.
- ❑ **Humidity System:**
 - Chemical Desiccant De-humidifier System
 - $<-70^{\circ}\text{C}$ dew point temperature in Corridor
- ❑ **Control System**
 - NEMA 12 Control Console
 - Dual PID controllers for independent freezer chamber controls
 - PID controller for corridor temperature control
 - Two Pen Chart Recorder
 - Freezer High Temperature Alarms
 - Refrigeration Compressor Fault Alarms
 - Man-In-The-Box Alarm
 - Emergency button located on inside of corridor
 - Temperature and Pressure sensors for system monitoring
 - Remote Alarm monitoring
- ❑ **Access Port**
 - One (1) 3" diameter validation port and plug located adjacent to corridor door
- ❑ **Lighting**
 - Vapor-proof, white Incandescent lamps in corridor to provide 50 foot-candles measured 40" above the floor at 20C
- ❑ **Refrigeration System**
 - Redundant Cascade Systems with automatic switch-over
 - High Stage R-507 (CFC Free)
 - Low Stage R-508B (CFC Free)
 - Available in water-cooled or air-cooled designs
- ❑ **Available Options**
 - Liquid Nitrogen back-up system
 - Battery Back-up for controls
 - 6, 8, 10 or 12 door freezer compartment designs
 - Stainless Steel Wire Shelving
 - Installation Qualification (IQ) and Operational Qualification (OQ)