

## **COMMODITY DESCRIPTION**

| ITEM NO.   | DESCRIPTION                                  | UNIT | QUANTITY |
|------------|--|------|----------|
| 4110300501 | -80°C Ultra-Low Temperature Freezer,<br>682L | SET  | 2        |

### **A. Features**

1. Alarm function (abnormal temperature, compressor, door open status, improper voltage, battery shortage, power failure, etc).
2. Powered by H-drive's hydrocarbon technology, these systems save up to 25% in energy usage and heat rejection over conventional refrigerant ultra-low freezers
3. Designed for daily usage, recovers cabinet temperature 20% faster after opening the door
4. A quiet sound output below 53 dBA, enables the freezer to come out of the hallway and into the lab
5. Meets +/-10°C validation protocols at -80°C with strong peak variation and steady-state temperature variation
6. Natural hydrocarbon refrigerants reduce system operating stresses promoting outstanding reliability and worry-free sample protection
7. User-friendly and easy-to-read touch control panel
8. Contain a physical barrier such as inner doors allowing for easy sample access without exposing greater freezer content to ambient conditions
9. Improved customer convenience with new ergonomically designed handle, high contrast eye-level display, and comfortable easy-access shelf locations
10. Compatible with most racking systems including a full range of racks for boxes, microplates, and tubes

### **B. Specifications**

1. Temperature range: -50°C to -86°C (Microprocessor Temperature Controller)
2. Internal volume: 682 Liters
3. Cabinet type: Upright
4. Door type: Single
5. Box storage capacity: minimum 480 ea
6. External dimension (H x W x D): 198.1 x 86.4 x 97.7 cm
7. Shipping weight: 333 kg
8. Electrical data: 208-230V, 50/60Hz
9. Equipped with full racks
10. Validation (Installation Qualification, Operation Qualification) services performed by professionally trained and certified engineers.

### **C. Remarks**

1. The installation and operation should be carried out by the bidder/supplier responsibility at end-user's site.
2. Five years warranty service should be provided by supplier after the performance test.
3. Experience in performing validation (IQ,OQ) services for ultra-low temperature freezers used in GCLP laboratories preferred.
4. Preferred delivery date: within 3 months
5. Any equipment same or above this Commodity Description is acceptable for bid participation.

# **Validation Service Specification**

## **Qualification Operation List**

- Generic LED IQ report
- Freezer, refrigerator or ULT freezer OQ
- Refrigerator or freezer temperature mapping

## **Installation Qualification Content List**

- Verification of service representative information
- Verification of customer information
- Verification of unpacking, assembly and installation
- Verification of utility, facility and environment
- Verification of system component configuration
- Verification of installed options
- IQ review and completion
- Test equipment calibration certificate
- Verifier training certificate

## **Operational Qualification Content List**

- Verification of displays and main functions
- Verification of alarms and safety
- Verification of reference measurement
- OQ review and completion
- Test equipment calibration certificate
- Verifier training certificate

## **Temperature Mapping Content List**

- Temperature mapping
- Open door recovery evaluation
- Power failure evaluation