

**Thermo Scientific**  
**TSX Series – HP Blood Bank Plasma Freezers with Auto-defrost**

**PART 1 – GENERAL**

**1.1 DESIGN AND PERFORMANCE CRITERIA**

- A. High performance laboratory blood bank plasma freezer manufactured to operate -30C. Must be available in 115V/60 Hz or 208-230V/60 Hz.
- B. Freezer must be constructed of 2" non-CFC foamed-in-place polyurethane insulation with solid door(s)
- C. Freezer shall have self closing door with magnetic gasket
- D. Freezer shall be painted with high-impact, scratch resistant powder coat finished interior and exterior to ensure long term viability and maximum interior temperature uniformity.
- E. Door allows one-handed opening and closing and must include door key lock
- F. Freezer shall have stainless steel drawers
- G. Freezer shall have a 1 inch access ports as standard feature
- H. Freezer shall have auto-defrost
- I. Freezer shall "dry" remote alarm contacts for remote alarm monitoring
- J. Freezer must include chart recorder

**1.2 SUBMITTALS**

- A. Submit complete submittal package of product literature, manual, and drawings. Incomplete submittals are not acceptable, will be considered non-responsive, and will be returned without review.

**1.3 QUALITY ASSURANCE**

- A. High performance refrigerators must be built to, and contain the registration mark for UL, cUL, (60 Hz models) and CE (50 Hz models) standards for safety and performance.

**1.4 QUALIFICATION**

- A. Manufacturer – Company must have 10 years documented experience in the construction of high performance laboratory refrigerators.

- B. High performance blood bank freezers – Shall be registered for UL, cUL, (60 Hz models) and CE (50 Hz models) standards.

## **1.5 WARRANTY**

- A. Manufacturer's warranty against defects in material and workmanship covering parts must be available for a period of 2 years covering parts and labor. (2 yr parts only for international)
- B. Standard exceptions for air filters, batteries, and gaskets shall apply.
- C. Extended manufacturer's warranty options should be available at additional charge if required

## **PART 2 – PRODUCT**

### **2.1 MANUFACTURERS**

- A. Thermo Scientific

### **2.2 TSX Series high performance blood bank refrigerator capacities**

- A. Model TSX2330LA/TSX2330LD – 23.3 cu ft capacity

### **2.3 TSX Series high performance blood bank refrigerator dimensions**

- 1. Exterior Dimensions (H x W x D)
  - a. Model TSX2330LA/TSX2330LD – 79.2" x 37.2" x 28.0" (201.2 x 94.5 x 71.1 cm)
- 2. Interior Dimensions (H x W x D)
  - a. Model TSX2330LA/TSX2330LD – 58.0" x 29.0" x 24.0" (147.3 x 73.7 x 61.0 cm)

### **2.3 TSX Series high performance blood bank refrigerator control requirements**

- A. Microprocessor controller must monitor in one degree C increments, with the digital display
- B. Eye level information center for "At-a-glance" monitoring and ease of setting controls
- D. Must have high and low temperature alarms, door ajar alarm, power fail alarm, alarm test, and low battery alarm
- E. Refrigerator must have a second probe
- F. Battery back-up for temperature alarm monitoring system
- G. Keyed security lock for power, temperature and alarm settings

### **2.4 – OPTIONS AND ACCESSORIES**

- A. Options
  - a. 4 – 20 mA output
  - b. Stainless steel interior

**B. Accessories**

- a. Shelf kit
- b. Chart paper
- c. Alarm delay module
- d. Remote alarms
- e. Seismic restraint kit
- f. Telephone dialing system

**PART 3 – EXECUTION****1.01 INSTALLATION**

A. Install equipment level and plumb, according to manufacturer's written instructions.

- 1. Verify utility services are in required locations and are ready for use before installation of equipment.
- 2. Install equipment with access and maintenance clearances that comply with manufacturer's written installation instructions and requirements of authorities having jurisdiction.
- 3. Complete equipment assembly where field assembly is required.
- 4. Connect equipment to utilities.
- 5. Remove all packing materials from the site.