

**Thermo Scientific Barnstead MicroPure UV/UF Water Purification System  
A & E Specification Sheet**

Lab water purification system capable of producing between 1 – 15 L/day of Type 1 ultrapure water on demand

**PART 1 – GENERAL**

**1.1 DESIGN AND PERFORMANCE CRITERIA**

- A. Water purification system must provide 18.2 megohm quality (Type 1) water to be utilized in a laboratory environment. Type 1 water quality meets standards as defined by ASTM D1193-6, ISO 3696 and CLSI™-CLRW.
- B. Water purification system will be capable of delivering up to 15L per day on demand at a flow rate of up to 1 liter per minute using pretreated feed water (treated by deionization, distillation, reverse osmosis, or combination RO/DI) as the supply water.
- C. Water purification system must function as one component. The water purification system must be able to be mounted on the wall or bench.
- D. The system must also have built in product water resistivity and incoming feed water detection monitors.

**1.2 SUBMITTALS**

Product Brochure  
Water Purification System Operating Manual (includes installation instructions)  
Product Guidelines for Site Installation Drawings

**1.3 QUALITY ASSURANCE**

- A. Each water purification system will be certified by CE and CSA for electrical safety and integrity.

**1.4 QUALIFICATION**

- A. Manufacturer – Company must have 10 years documented experience in the construction of water purification systems.
- B. Water Purification System – Shall be CE and CSA certified and meet ASTM D1193 standards.

**C. 1.5 WARRANTY**

- A. Manufacturer's warranty against defects in material and workmanship covering parts and labor must be available for a period of one year. Standard exceptions for cartridges, filters, and lamps shall apply.

## **PART 2 – PRODUCT**

### **2.1 MANUFACTURER**

- A. Thermo Scientific Barnstead MicroPure Pro UV/UF water purification system – **50132370**

### **2.2 WATER PURIFICATION SYSTEM PRODUCT WATER SPECIFICATIONS**

- A. Ultrapure water flow rate of up to 1L/minute
- B. Product water must have a resistivity of up to 18.2 megohms-cm at 25°C
- C. Less than 5 ppb TOC (Total Organic Carbon) in the product water
- D. Pyrogen (bacterial endotoxin) levels of less than 0.001 EU/ml with in-line integrated ultrafilter
- E. Bacterial counts less than 0.01 CFU/ml
- F. RNase levels <0.003 ng/ml, and DNase <0.4 pg/μl with in-line integrated ultrafilter

### **2.3 WATER PURIFICATION SYSTEM PERFORMANCE REQUIREMENTS**

- A. Dispensing of type 1 water must be from the front of the water system with a variable flow control knob.
- B. System display must have adjustable angle display to make the display easy to read from any angle.
- C. System display should provide all system status data plus access to user menu.
- D. The system will include a UV lamp with up to a two-year lifespan that will emit both 185 nm and 254 nm wavelengths, designed to ensure organic removal as well as maintaining a bacteria-free environment.
- E. The system will include an inline ultrafilter for the removal of pyrogens with up to a two year lifespan. The system must allow for an ultrafilter rinse activated by the user. The unit must also automatically flush the ultrafilter. External point-of use ultrafilters are not acceptable.
- F. The system will automatically switch to “Interval” operation after it has been running, but idle, for 2 hours.
- G. Systems cartridges must be able to be removed / replaced with quick disconnect fittings with no threads, screws or other mechanisms required to change cartridges.
- H. System must have built-in feed water monitor which will alert the end-user if the incoming feed water does not meet the pre-set levels.
  - a. Feed water monitor must be able to be adjusted or turned off as end-user requires.
- I. An absolute 0.2μm polysulfone membrane filter is required as the final purification step as the water is being dispensed. The final filter will be sterilizable using an autoclave.
- J. The conductivity measurement is performed with two high precision measuring cells with a cell constants are 0.01 cm<sup>-1</sup>.
- K. Temperature measurements are made by a platinum chip sensor with ± 0.1° C accuracy.
- L. Water will re-circulate within the system when operating during the “Interval” mode. The recirculation time span during “Interval” mode can be user-modified.
- M. Digital microprocessor control automatically stores faults from the past 4 in Error History in user menu.

## 2.4 – ACCESSORIES

### A. OPTIONAL

- a. **09.2212** – Wall Mounting Bracket
- b. **09.1102** - Disinfection cartridge for use when the system requires disinfection cycle

### B. REPLACEMENT CONSUMABLES

- a. **09.1006** - Ultrapure polishing cartridge
- b. **09.1002** - UV lamp
- c. **50133981** - Ultrafilter
- d. **09.1003** - 0.2 micron final filter

### ADDITIONAL SPECIFICATIONS

DIMENSIONS (System)	12" W x 11.8" D x 21.5" H (305mm x 300mm x 545mm)
ELECTRICAL REQUIREMENTS	100 – 240 V, 50/60 Hz, 2-1A, up to 5 ft from unit
WATER CONNECTIONS	¾" NPTF provided. Customer supplied manual shut off valve with ¾" NPT fitting recommended
MIN/MAX INLET PRESSURE	2 – 87 PSI (0.1 – 6 bar)
RECOMMENDED FEED TEMPERATURE	2 – 40°C
RECOMMENDED FEED WATER TYPE	Pure water (Type 2 water)
DRAIN	An atmospheric drain must be available within 5 feet of the final mounting location