

**Thermo Scientific Barnstead Pacific TII Water Purification System
A & E Specification Sheet**

Lab water purification system capable of producing between 1 – 240 L/day of Type 2 pure water on demand from a tap/potable feed water supply

PART 1 – GENERAL

1.1 DESIGN AND PERFORMANCE CRITERIA

- A. Water purification system must provide 10 - 1 megohm quality (Type 2) water to be utilized in a laboratory environment. Type 2 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 240L per day at a production rate of 3, 7, 12, 20 or 40LPH using tap/potable feed water as the supply water.
- C. Water purification system must function as one component with an external storage reservoir. The water purification system must be able to be mounted on the wall or bench. The storage reservoir must also be able to be mounted on the wall or bench (exception on 100L reservoirs).
- D. The system must also have built in a product water resistivity monitor.

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.

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 Pacific TII UV 3LPH water purification system – **50132129**
- B. Thermo Scientific Barnstead Pacific TII UV 7LPH water purification system – **50132131**
- C. Thermo Scientific Barnstead Pacific TII UV 12LPH water purification system – **50132132**
- D. Thermo Scientific Barnstead Pacific TII UV 20LPH water purification system – **50131982**
- E. Thermo Scientific Barnstead Pacific TII UV 40LPH water purification system – **50132133**

2.2 WATER PURIFICATION SYSTEM PRODUCT WATER SPECIFICATIONS

- A. Pure water production rate of 3, 7, 12, 20, or 40L / hour
- B. Type 2 product water must have a resistivity of 10 -1 megohms-cm at 25 °C and:
 - a. Less than 30 ppb TOC (Total Organic Carbon) in the product water
 - b. Bacteria and particle removal of 99%
 - c. Silicate removal of greater than 99.9%

2.3 WATER PURIFICATION SYSTEM PERFORMANCE REQUIREMENTS

- A. The system must be able to produce type 2, 10 - 1 megohm quality water.
- B. Dispensing of type 2 water must be from the external reservoir.
- C. System must come compatible with a 30L, 60L, or 100L storage reservoir.
- D. Dispensing ports for type 2 water must be from the front of the reservoir to allow for easy dispensing.
- E. An optional hand dispenser must be available for the dispensing of type 2 water from the system.
- F. Optional hand dispenser must accommodate a 0.2 micron final filter.
- G. Optional hand dispenser must be flexible and able to reach vessels up to 5 feet away from reservoir.
- H. System display must have adjustable angle display to make the display easy to read from any angle.
- I. System display should provide all system status data plus access to user menu.
- J. The system will include a UV lamp with a two-year lifespan that will emit 254 nm wavelengths, designed to ensure a bacteria-free environment.
- K. The system will automatically switch to “Interval” operation after the reservoir is completely filled.
- L. The system will automatically recirculate the water stored in the reservoir for 15 mins after every 30 min of being idle to ensure product water is always fresh and ready for use. Recirculation time must be user adjustable.
- M. Systems cartridges must be able to be removed / replaced with quick disconnect fittings with no threads, screws or other mechanisms required to change cartridges.
- N. System cartridges must be two discreet canisters. One cartridge containing the RO membrane and the second cartridge containing the resin required to produce type 2 water. One housing for all is not acceptable. Regeneration modules are not acceptable.
- O. Temperature measurements are made by a platinum chip sensor with $\pm 0.1^{\circ}$ C accuracy.

2.4 WATER PURIFICATION RESERVOIR PERFORMANCE REQUIREMENTS

- A. Three reservoir sizes must be available, 30L, 60L, or 100L.
- B. Reservoirs must come with built in level display and recirculation pump.
- C. Storage reservoir must communicate with system to maintain a continual supply of type 2 water in the reservoir.

- D. Reservoir storage volumes must be able to be programmed at the system.
- E. Reservoirs must be made of opaque polyethylene to prevent exposure to light.
- F. Reservoir design must include a conical bottom to allow for complete emptying of the reservoir.
- G. The 30L and 60L reservoir must be able to be either bench or wall mounted.

2.4 – ACCESSORIES

A. REQUIRED

- a. **09.4000** – 5 micron filter with activated carbon and a hardness stabilizer cartridge to protect RO membrane from particulate damage
- b. **06.5032*** – 30L storage reservoir with level display and recirculation pump
- c. **06.5062*** – 60L storage reservoir with level display and recirculation pump
- d. **06.5082*** - 100L storage reservoir with level display and recirculation pump
- e. **06.5001** – Sterile overflow filter for reservoir
- f. **06.5002** – Sterile filter and CO2 adsorber for reservoir

*Must select one reservoir – size depends on customer product water demand

B. OPTIONAL

- a. **AY1137X1** – Printer
- b. **50138221** – Hand Dispenser
- c. **06.5015** – 30L reservoir wall mounting bracket to affix reservoir to wall
- d. **06.5016** – 60L reservoir wall mounting bracket to affix reservoir to wall

C. REPLACEMENT CONSUMABLES

- a. **09.4011** – High purity deionization cartridge
- b. **09.4002** - UV lamp
- c. **CMX25** – Cleaning Solution
- d. **22.0046** – RO membrane for 3, 7, 12, and 20LPH systems (20LPH order 2)
- e. **22.0087** – RO membrane for 40LPH system (order 2)

ADDITIONAL SPECIFICATIONS

DIMENSIONS (System)	14.6" W x 13" D x 23.7" H (372mm x 330mm x 603mm)
DIMENSIONS (30L Reservoir)	23.5" H x 15" D (598mm x 380mm)
DIMENSIONS (60L Reservoir)	35.9" H x 15" D (912mm x 380mm)
DIMENSIONS (100L Reservoir)	45.2" H x 15" D (1249mm x 380mm)
ELECTRICAL REQUIREMENTS	100 – 240 V, 50/60 Hz, 2-1A, up to 5 ft from unit
WATER CONNECTIONS	¾" NPT with manual shut off valve recommended
MIN/MAX INLET PRESSURE	29 – 85 PSI (2 – 6 bar)
RECOMMENDED FEED TEMPERATURE	2 – 35°C
RECOMMENDED FEED WATER TYPE	Tap/Potable Water
DRAIN	An atmospheric drain must be available within 5 feet of the final mounting location