

Thermo Scientific Barnstead LabTower EDI water purification system

The Barnstead LabTower EDI is an integrated system combining purification with EDI technology and storage in one, as well as producing both Type 1 and Type 2 water. Stock high purity water safely and conveniently!



APPLICATIONS INCLUDE:

Type 1 Water Applications

- Cell and tissue culture
- PCR, DNA sequencing
- Electrophoresis, TOC Measurements, IC
- HPLP, GC-MS, ICP-MS, AA

Type 2 Water Applications

- Rinsing lab glassware
- Supplying autoclaves and ultrapure water systems
- Preparing and diluting buffers, reagents, and media

Ultrapure water which exceeds ASTM Type I standards, with a resistivity of 18.2 M Ω .cm and TOC 1-5 ppb with standard UV lamp. High purity water ASTM Type II water, with resistivity of 15-10 M Ω .cm, is ideal for daily needs of 100 to 500 L.

Two systems in one

- Unique systems with pretreatment plus polisher to produce both Type 1 and Type 2 water
- Type 2 water is stored in the integrated 100 L high purity water reservoir
- Water system sits on top of the reservoir saving critical bench space

Ready-to-use

- Feed water pressure switch, all filters and cartridges, sterile filter, all in one package

Two ways to draw water

- Dispense ultrapure water directly from the system via the dispenser with sterile filter. The water quality is measured immediately prior to the dispensing point.
- Type 2 water is accessible from the reservoir, which is an ideal supply for lab equipment such as autoclaves

Performance for your application feeds

- High performance reverse osmosis module is paired with an EDI module and polisher cartridge
- Two systems to choose from with capacities of 15 and 30 L per hour

Quick Look Comparison		
	LabTower EDI 15 system	LabTower EDI 30 system
Type 1 Water		
Resistivity at 25°C, M Ω .cm	18.2	18.2
Conductivity, μ S/cm	0.055	0.055
TOC, ppb	1-5	1-5
RNase, ng/ml	<0.003*	<0.003*
DNase, pg/ μ l	<0.4*	<0.4*
Bacterial content in CFU/mL	<1	<1
Particles, 0.22 μ m/mL	<1	<1
Endotoxines, EU/mL	<0.001	<0.001
Flow rate at dispenser, L/min	1.5	1.5
Type 2 Water		
Pure water production at 15°C L/hr	15	30
Resistivity at 25°C	15-10	15-10
Conductivity	0.067-0.1	0.067-0.1

*Specification only applicable if system has optional ultrafilter attached.

dual quality system with EDI technology

Compact, stylish, mobile

- Free-standing unit takes up no bench space
- Easily relocated with bottom-mounted rollers

Safe operation

- Microprocessor control for automatic operation
- Continuous monitoring of all critical parameters
- Recirculation pump protects purified water from bacterial growth during standstill

GLP-compliant documentation

- Real-time clock and code-protected operating system prevents unauthorized changes to system settings
- RS-232 interface with adjustable send-interval for safe data transfer of all measured data, faults, date and time to a PC computer or log printer
- Digital microprocessor control automatically monitors and stores faults from the last four weeks
- USP-compliant conductivity measurement with temperature compensation that can be switched on or off

100 L Integrated polyethylene reservoir safely stores Type 2 water

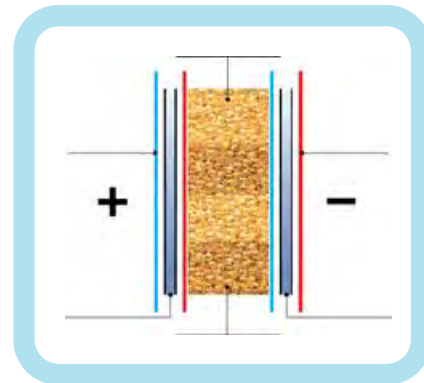
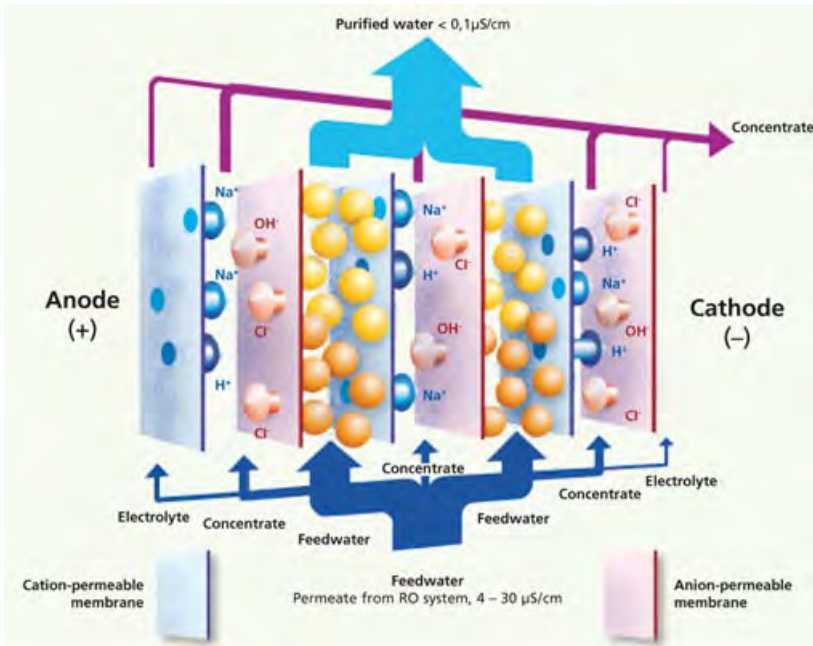
- Automatic water recirculation in the reservoir moves water across a special polisher module ensuring fresh Type 2 water on demand
- High-purity water reservoir outlet for convenient drainage
- Efficient cleaning and disinfection enhanced by conical bottom design for completely emptying reservoir
- Integrated reservoir provides 100 L of purified water storage
- Sterile vent filter and reservoir overflow prevents internal contamination by microorganisms from the surrounding air
- Optional CO₂ adsorber prevents CO₂ adsorption into the water, which would reduce cartridge life.
- Highly visible reservoir volume display on LabTower controller
- Customize volume stored in the reservoir via the controller



Quickly view reservoir level (volume in %) with highly-visible continuous monitor



Thermo Scientific Barnstead LabTower EDI water purification system (continued)



Electrodeionization, EDI, unites two proven technologies for producing ultrapure water: Electrodialysis and ion exchange. In contrast to conventional ion exchange in which resins must be either chemically regenerated or the cartridge discarded, EDI utilizes an electric current for continual resin regeneration.

Technologies that keep you one step ahead

- Constant high efficiency of the ion exchange layer bed produces consistently high quality water
- No regeneration chemicals required and no disposal of cartridges, making this technology friendly for the environment
- No exchange of spent resins or cartridges saves cost
- High-purity water when you need it with no wait time



Optional hand dispenser

How EDI works

Several layers of ion selective membranes are situated between an anode and a cathode. Layered ion exchange resin beds and concentrate chambers are alternately positioned between them.

On applying an electric voltage, water (H_2O) is split into H^+ and OH^- in the cell.

The H^+ and Na^+ cations can migrate through the cation permeable membranes, anions through the anion permeable membranes.

The ions migrate in the direction of the applied voltage, i.e. anions to the positive pole (anode), cations to the negative pole (cathode). The water ions that migrate through an ion exchange chamber displace salt ions retained by the ion exchange resins and so continually regenerate the resins.

The salt ions migrate through the appropriate ion selective membranes into the concentrate chambers and are flushed out by water. As all concentration chambers are flushed, excess H^+ and OH^- ions can again combine to form H_2O .

Feed Water Requirements*	
Source	Potable tap water softened or hardness stabilized
Conductivity, $\mu\text{S}/\text{cm}$	<1500
Colloid index	< 3
pH-range	4-11
Temperature, $^{\circ}\text{C}$	2-35
Pressure, psi (bar)	1.4-87 (2-6)

* Please see user manual for complete list of feed water requirements

Product Specifications					
Flow rate	Operating pressure min/max	Electrical requirements	Power consumption	Feed water connector	Dimensions W x D x H in (mm)
up to 1.5 L/min	29-87 psi (2-6 bar)	90-240V, 50/60Hz	0.25 kW	3/4" NPT	17.7 x 22.8 x 59.1 (450 x 580 x 1500)

System Options		LabTower EDI 15	LabTower EDI 30
LabTower EDI system* All systems include an ultrapure polisher cartridge, RO membrane, RO pretreatment filters (5 μm filter and hardness stabilizer), EDI module, UV lamp, sterile 0.2 μm filter, 10 inch 1 μm filter (reservoir outlet) and pressure regulator		50132395	50132396
Required Accessories			
Sterile overflow for reservoir Prevents the penetration of bacteria and other microorganisms		50132714	50132714
CO₂ adsorber + sterile filter, 0.2 μm Combination sterile filter with CO ₂ adsorber will prevent CO ₂ from entering the tank, saving cartridge life		06.5002	06.5002
Mix Multi Mini water softener Required if feed water silt density index (SDI) is greater than 3. Also required for purchase with a softener is the softener salt, hardness detection kit, and the 5 μm filter with carbon.	120V, 50/60Hz	50129892	50129892
	240V	50130297	50130297
Softener salt Required for use with the water softener	North America/Latin America	50129893	50129893
	Europe and Asia Pacific	06.2000	06.2000
5 μm filter with carbon cartridge Required when Mixed Multi is purchased		50134022	50134022
Hardness detection kit – required with purchase of softener Alerts user when water is no longer softened	Europe	06.1000	06.1000
	North America/Latin America Asia Pacific	50134335	50134335
Optional Accessories			
Sterile 0.2 μm filter for reservoir outlet		06.5555	06.5555
Disinfection cartridge Reusable cartridge needed to clean the water purification system.		09.2201	09.2201
Ultrafilter Point-of-use ultrafilter to reduce levels of pyrogens and nucleases in the product water.		09.1022	09.1022
Printer Utilizes RS-232 interface for safe documentation of all measured values and faults with date and time in compliance with GLP-Guidelines	120V, 50/60Hz	AY1137X1	AY1137X1
	230V, 50Hz	09.2207	09.2207
Hand Dispenser Kit Hand dispenser with 3 meter cord that connects to tank (to dispense Type 2 water). Ships with a 0.2 micron final filter.		50138221	50138221
Qualification documents (IQOQ)		IOQDOCE50133916	IOQDOCE50133916
Replacement Consumables			
Ultrapure polisher cartridge		09.2005	09.2005
5 μm filter and hardness stabilizer		06.5204	06.5204
Sterile 0.2 μm filter for system		09.1003	09.1003
UV lamp for system		09.2002	09.2002
Cleaning solution	Europe/ Asia Pacific	09.2202	09.2202
	North America/Latin America	CMX25	CMX25
Reverse osmosis membrane		22.0046 (requires 2)	22.0087 (requires 2)

