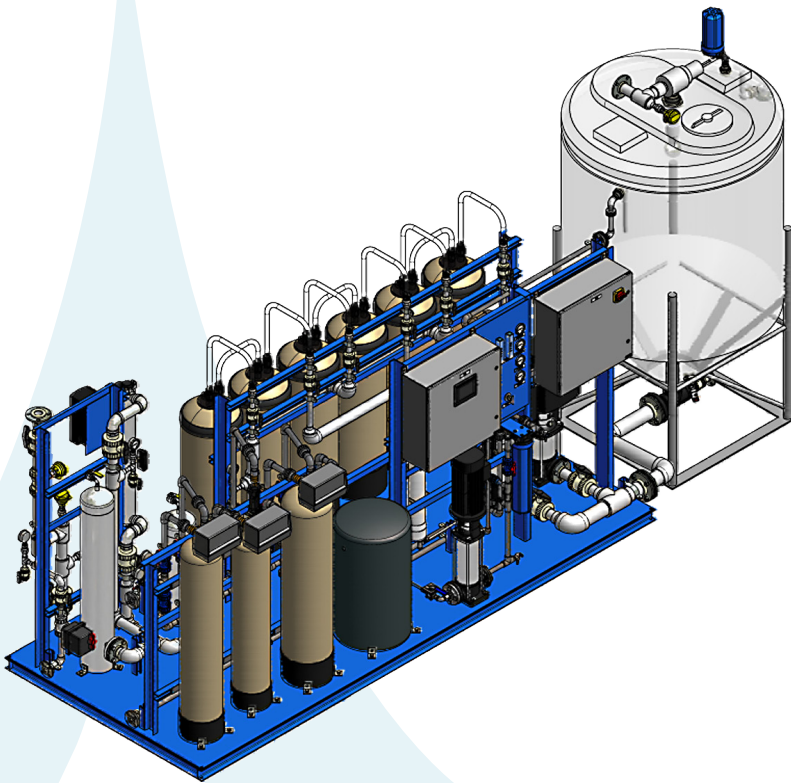


High Purity Lab Water Skids



Overview

Marlo's Pre-Engineered Laboratory Water Systems are designed to serve as the centralized, purified water source for a variety of academic, medical, and other research laboratory facilities. Designed to meet or exceed the Type II reagent-grade water platform set forth by CAP/NCCLS and ASTM standards. Standard systems are furnished with all the treatment equipment fully pre-piped, pre-wired, and factory-tested on a common skid package to minimize field installation and start-up costs. The standard system includes the following equipment:

- Pre-Treatment (inlet filter / carbon / softener)
- Reverse Osmosis (RO) machine
- RO water storage tank
- Stainless steel distribution pumps
- DI exchange polishers (portable exchange type)
- Ultraviolet (UV) sterilizer
- Final sub-micron filter (0.2 micron)
- Central control panel with purity monitoring

Operating Parameters

- Operating RO Pressure: 200-250 psig
- Nominal RO Recovery: 50-65%
- Nominal TDS Rejection: 98-99% (RO unit)
- DI Water Quality: 16-18 Mega Ohms
- Operating Temperature: 45-85° F
- Design Temperature: 50° F
- Minimum Inlet Pressure: 50 psig
- Electrical Requirement: 460 VAC, 3-phase, 60 Hz.
120 VAC, 1-phase, 60 Hz.
- DI Loop Outlet Pressure: 75 psig

Materials of Construction

- Skid Frame: Epoxy-coated carbon steel
- Membrane Elements: Thin-film Composite (TFC)
- Membrane Housings: FRP
- Low Pressure Piping: Sch 80 PVC
- High RO pressure piping: 304SS
- RO/DI Water Storage Tank: Polyethylene
- DI Water Loop Piping: Fusion-welded Polypropylene

Pump and Motor

- Pump: 304/316SS vertical multi-stage centrifugal
- Motor: TEFC, 460 VAC, 3-phase, 60 Hz.

Standard Features

- Automatic backwashing carbon filter (timer)
- Twin alternating water softener (metered)
- Single pass Reverse Osmosis unit
- Conical bottom, closed top storage tank
- Storage tank level controller and mounting stand
- Duplex RO/DI distribution pumps (2 x 100%)
- Primary/Polisher mixed bed DI polishers
- UV Sterilizer unit with intensity monitor (254 nm)
- NEMA-4 Electrical enclosures
- Pre-wired motor starters with fused disconnect switch
- DI Water outlet flowmeter
- DI Water outlet resistivity monitor

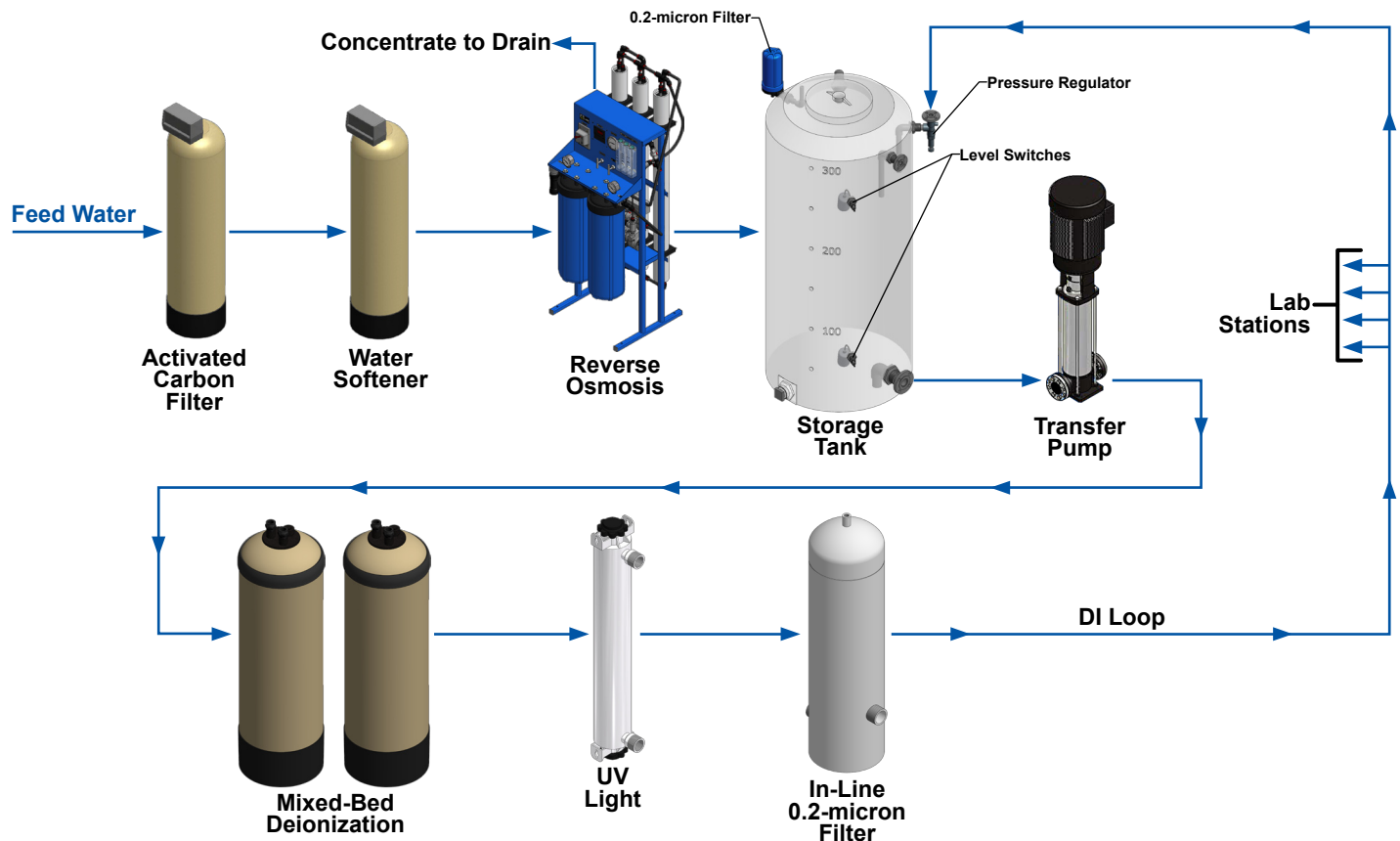
Optional Equipment Available

- Programmable Logic Controller (PLC) systems
- Variable Frequency Drives (VFD's)
- Multi-media filter pre-treatment
- Type III Lab Systems

SPECIFICATIONS

MODEL	LWS-1500-20	LWS-2500-20	LWS-3600-30	LWS-5400-40	LWS-7200-60
RO WATER GENERATION RATE (GPD)	1,500	2,500	3,600	5,400	7,200
DI WATER LOOP RECIRCULATION RATES (GPM)	20 @ 75 psig	20 @ 75 psig	30 @ 75 psig	40 @ 75 psig	60 @ 75 psig
DI WATER LOOP CONNECTION SIZE	1"	1"	1 1/4"	1 1/2"	2"
STORAGE TANK VOLUME (GAL)	300	500	500	1,000	1,000
DI WATER RECIRCULATION PUMP MOTOR (Hp)	2.0	2.0	3.0	3.0	5.0
DI EXCHANGE TANKS (QTY/SIZE)	Qty (4) 12"x52" / 2.5 ft. ³ ea.	Qty (4) 12"x52" / 2.5 ft. ³ ea.	Qty (4) 14"x47" / 3.5 ft. ³ ea.	Qty (4) 14"x47" / 3.5 ft. ³ ea.	Qty (6) 14"x47" / 3.5 ft. ³ ea.
INLET FEED WATER RATE (GPM)	2.1	3.5	4.25	6.25	7.75
INLET FEED CONNECTION SIZE	1"	1"	1"	1"	1"
MAXIMUM WATER TO DRAIN (GPM)	7	10	12	13	15
DRAIN CONNECTION SIZE	1"	1"	1"	1"	1"
SYSTEM DIMENSIONS (LxWxH)	192"x56"x90"	198"x66"x106"	198"x66"x106"	219"x66"x114"	228"x66"x114"
SHIPPING WEIGHT (LBS)	2,700	2,800	3,000	3,200	3,600

PROCESS FLOW DIAGRAM



Notes

- Standard specifications are based on typical, general lab applications and incoming water quality. Specifications may be altered to meet certain site conditions and changes in water quality.
- Dimensions and shipping weights are estimated only. Actual dimensions and weights differ dependant upon the final system design and options selected.