

APEX™ Systems Modular Purified Water Generation

The APEX™ system is a modular USP Purified Water system on a single skid for easy installation, startup and validation. It is specifically designed for pharmaceutical cGMP and other high-purity applications that require an easily validated packaged water system. The system can be either chemically or hot water (80°C) sanitized (optional). Each system undergoes a rigorous, fully operational Factory Acceptance Test (FAT) and comes with a comprehensive validation documentation package formatted per GAMP 4 requirements.

The pre-engineered, totally integrated, and automated APEX™ systems are designed to help you expedite all phases of planning, procuring and commissioning your new water purification system. Drawing submittals and validation protocols are available quickly to expedite construction and planning.

APEX™ System Benefits

Compact single skid design saves installation time and valuable floor space

- Quick delivery keeps project moving fast
- Fully functional FAT and complete validation package reduces commissioning time
- User friendly, panel mounted, color touchscreen HMI makes operation and control a snap
- Seven flexible size configurations designed to meet your production needs – capacities from 2 to 25 gpm (0.45 to 5.7 m³/hr)

Standard APEX™ System Features

- Carbon steel frame and control panels
- Fiberglass reinforced plastic (FRP) break tank
- SCH 80 CPVC and PVDF piping
- On/off actuated and manual valves (feed/ RO reject) with optional stainless steel permeate piping
- Optional automated hot water sanitization process



APEX™ System Model 250

Performance Specifications

Model	20	40	60	80	130	180	250
Maximum Product, gpm(m ³ /hr)	2.3 (0.5)	4.4 (1.0)	6.6 (1.5)	8.8 (2.0)	15.3 (3.5)	19.8 (4.5)	28.8 (6.5)
Nominal Product, gpm(m ³ /hr)	2.0 (.45)	4.0 (0.9)	6.0 (1.4)	8.0 (1.8)	13.0 (2.9)	18.0 (4.1)	25.0 (5.7)
Minimum Product, gpm(m ³ /hr)	1.5 (0.3)	1.7 (0.4)	3.4 (0.8)	5.4 (1.2)	7.7 (1.7)	12.6 (2.9)	17.1 (3.9)
Maximum Feed, (m ³ /hr)	3.3 (0.7)	6.5 (1.5)	9.7 (2.2)	13.1 (3.0)	22.7 (5.1)	29.3 (6.6)	42.7 (9.7)
Maximum Drain, gpm(m ³ /hr)	10 (2.3)	12 (2.7)	15 (3.4)	20 (4.5)	30 (6.8)	40 (9.1)	60 (13.6)
Nominal Recovery %	64	68	68	68	68	68	68
Inlet Pressure	60 to 95 psig regulated + / - 5 psig						
Inlet feed water temperature	45 to 85°F (7.2 to 35°C)						

Note: Flow rates and recoveries are contingent upon feed water quality. Pressure and temperature regulation required by customer. Contact your local sales representative for details.

Physical Specifications

Model	20	40	60	80	130	180	250
Height, in (cm)	78" (198)				97" (246)		
Width, in (cm)	120" (305)				149" (378)		
Depth, in (cm)	60" (152)				72" (183)		
Shipping Weight, lb (kg)	3,300 (1497)	3,800 (1724)	4,400 (1996)	4,600 (2087)	6,300 (2858)	7,500 (3042)	8,600 (3901)
Operating Weight, lb (kg)	4,200 (1905)	4,600 (2087)	5,500 (2495)	6,000 (2722)	8,400 (3810)	9,700 (4400)	11,900 (5398)
Feed Water Inlet, Flanged	3/4"	1"	1"	1-1/2"	1-1/2"	2"	2"
Product Outlet, Tri Clamp	1/2"	3/4"	3/4"	3/4"	1"	1"	1-1/2"
Skid Drain, Flanged	2"				3"		
Break Tank Capacity	37 gallons (140 liters)				90 gallons (341 liters)		

Equipment Specifications

Softeners	Fiberglass reinforced composite vessels with brass multiport valves (not hot water sanitizable)
Activated Carbon Filter	Stainless steel vessel, 100psig (689 kpa) ASME code with removable insulation jacket
Pretreatment Filter	Stainless steel housing with 5.0 micron cartridge filter
Pretreatment UV	Stainless steel chamber with 254 nm lamp
Break Tank	FRP dished bottom
RO Pump	Stainless steel vertical multi-stage centrifugal with VFD
RO Vessels	Fiberglass reinforced composite vessels, ASME code
RO Membranes	Full fit thin film composite polyamide, hot water sanitizable (optional)
CEDI Modules	CDI-LX™ modules, hot water sanitizable
Frame	Polyurethane painted carbon steel
Controls	PLC in NEMA 4 carbon steel enclosure
HMI	10" (254 mm) color touch screen



APEX™ System Model 250 (back view)

Optional Configurations	
Sulfite Option	Provides an alternate to the activated carbon filter for dechlorination. Option includes metering pump and solution tank with manual rate control, chlorine analyzer for alarm
Hot Water Sanitization	HWS option includes break tank heater, heater panel and HWS membranes
Permeate Piping	Stainless steel piping (from RO/CDI permeate)

Optional Components	
Hardness Monitor	Hardness analyzer integrated into control system
pH Adjust	Metering pump, solution tank and pH monitor with automatic rate control by control system
Final UV	Sanitary stainless steel chamber with 254 nm lamp
Final Filter	Sanitary stainless steel housing with 0.1 micron cartridge filter

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