Equipment Engineering Specification Sheet

Excalibur Water Systems Model RO SFCP4
Reverse Osmosis Surflo Commercial Series Service Operation

Supply one (1), only Excalibur Water Systems Model RO SFCP4 Reverse Osmosis System. Provide as indicated a factory assembled and tested reverse osmosis (RO) system shipped for ease of installation and start up. All equipment and material shall be supplied per the specifications as intended for a complete and operational system.

Steel Frame
Supply one (1), only 44" length x 30" width x 52" height free standing powder coated carbon steel frame.

Inlet Solenoid Valve
Supply one (1), solenoid valve operated normally closed.

Pre-Filter Housing
Supply one (1), 4.5" x 10" polypropylene filter housing with pressure relief button.

Pre-Filter Cartridge
Supply one (1), Jumbo 4.5" x 10" 5-micron sediment rust particle filter.

High Pressure Booster Pump
Supply one (1), 1.5 HP horizontal centrifugal booster pump to boost the incoming feed water pressure to the engineering design specifications of the permeate, concentrate and recycle flow rates based on model RO SFCP4. Pump suction inlet, discharge, housing, shaft, coupling is stainless steel with thermoplastic impellers and diffusers.

Membrane Housings
Supply four (4), Φ4" x 40" length 304 stainless-steel high-pressure membrane housing with single piece end cap 2 port end entry with half clamp closure maximum pressure 300 psi. O-ring seals EPDM material porting 0.5" FNPT connections.

Membrane
Supply four (4), 4" x 40" Extra Low Energy Membrane. The RO elements shall be polyamide thin-film composite (TFC). Membrane element maximum operating temperature 113°F (45°C), pressure 600 psi, and pressure drop 15 psi. Must be able to operate at a continuous pH range of 2-11 with a maximum silt density index of 5 and free chlorine tolerance of <0.1ppm.

Flow Sensors
Supply three (3), paddle wheel flow sensors that output an analog signal (4mV – 20mV). Flow sensor ranges to be based off engineering specifications of the permeate, concentrate and recycle flow rates based on model RO SFCP4. The sensors mounted on tee shall have threaded connections. The sensors will be connected to the PLC controller. The sensors shall have the accuracy of +/- 1%.

Pressure Gauges
Supply two (2), liquid filled pressure gauges with panel flush mount design for membrane pressure and feed pressure with ranges from 0-300 psi.

Controller
Supply one (1), PLC controller with HMI LED touchscreen to display the performance parameters, operating control values with graphic icons and system errors. The system shall be equipped with feed and permeate TDS monitor, feed pH sensor, permeate divert valve, inlet valve and digital flow meters for permeate, concentrate and recirculation lines. The setpoints and other settings shall be programmed from HMI. The controller shall have the inputs for low pressure switch, high pressure switch, permeate, concentrate and recirculation flow meters, tank low level, tank full low level, tank full high level and pre-treatment lockout. The controller shall have outputs for inlet valve, permeate divert valves, optional membrane flush valve, booster pump, re-pressurization pump and audible alarm.

Power
Power must be supplied to the reverse osmosis system 120/240 VAC -15 + 10% 50/60 Hz. Standard plug in type plug supplied for power to the reverse osmosis system.

Flow Rate
Permeate product water shall be delivered at 6,300 GPD, 4.4 GPM (0.28 l/s) and concentrate (waste) water flow shall be 1.5 GPM (0.09 l/s).

Start-up
Successful equipment provider shall follow the manufactures printed instructions to start up the system after plumbing and electrical requirements are completed. This includes raw water testing, programming, individual start-up, system operation, and product water testing post reverse osmosis and training of personnel. If needed, the successful bidder shall contract an approved authorization service agent from the manufacturer to assist with these procedures.

Warranty
Equipment and /or parts shall be covered by manufacturer's replacement warranty as follows:
- Reverse Osmosis System – FIVE (5) YEARS
- High Pressure Pump – FIVE (5) YEARS
- All fittings & tubing – FIVE (5) YEARS
- Controller & Electronics – FIVE (5) YEARS
- Membrane(s) – ONE (1) YEAR