

Technical Data Sheet

Sequoia S Immersed Steam Electrode Boiler

Sequoia S is a high voltage immersed electrode steam boiler for large commercial and industrial applications. It features nearly 100% efficiency, clean operation, and zero on-site emissions. Sequoia is available in sizes from 2.5 MW to 70 MW.

Reliable, Low-Maintenance Boiler Ideal for Decarbonization and Electrification

Sequoia S features long-life, low-maintenance electrodes and has fewer parts to clean and maintain compared with electric element boilers. There are no combustion hazards because there are no flames, fumes, fuel lines or fuel storage tanks. Because it's virtually 100% energy efficient and emission-free, Sequoia S provides an ideal solution for applications where building decarbonization or electrification are key considerations. Sequoia S provides seamless operation over an output range of 10% to 100% (10:1 modulation) to optimize demand fluctuations while reducing operating and supervisory personnel. Users can take advantage of lower energy rates during daily or seasonal off-peak periods to significantly reduce energy costs. Mechanical room space is saved, as Sequoia S matches the capacity of large gas- or oil-fired boilers (up to 70 MW) in a much smaller footprint.



Features

- Any voltage up to 25 KV, 3 phases, 3 wires, and centerline grounded line
- Capacity range: 2.5 to 70 MW
- Electric Power Supply Voltage: 4160 to 25000 V
- Operating pressure: 100 to 300 psi
- Power Feeds (Current Passage) assembled and certified for 42000 V and 230 psi (16 bar) for any operating voltage
- Fast Response: 0 to 100% capacity in hot state - 1 minute; Cold to hot state - 15-25 minutes (depending on size)
- Simple controls
- Can be added to existing systems and is suitable for optional water storage facilities
- Ability to take advantage of low off-peak electricity rates and demand swings

Other Features

Mechanical (Base)

- Pressures vessel: A.S.M.E design, CRN – pressure vessel registration certificate (Canada)
- Complete assembled power feeds and internal parts
- Boiler actuator and capacity control system
- 24" manway
- Sheet metal jacket and thermal insulation
- Cage surrounding high voltage connections

Plumbing (Base)

- Safety valve(s)
- Manual blowdown and drain valve
- Automatic air vent

Electrical

- Neutral terminal
- Electrode terminal enclosures
- Electrodes
- Circulation pump motor and motor starter

Control

- Free standing control panel
- Pre-programmed electronic processor
- Shield position indicator
- Boiler pressure gauge
- Boiler temperature gauge
- Operating temperature control
- High temperature limit
- High conductivity detection
- Temperature transmitter
- Water flow switch
- Low water level detection

Customer-Supplied Optional items

- Supply circuit protective relays
- Supply circuit switchgear
- Special valves
- Special instrumentation
- Chemical feed systems
- Water treatment equipment

Shipping

The unit must be laid down for shipment requiring some disassembly. Valves, trim, water level controller, electrodes and actuator will be removed for shipping and require field installation. Unit may then be field connected to feedwater, electric power and control panel.

Water Treatment

All boilers require adequate water quality as determined by conductivity, pH, softness and chemical content. The type and degree of water treatment will be determined by local water quality, type of boiler, nature of operation, and quantity of raw make-up water required.

Most water supply systems are suitable for use with AERCO Electrode Boilers when supplied with proper water treatment. A complete water analysis must be furnished to AERCO for review in order to assure proper water quality.

Electrical Requirements

The Sequoia S can be connected directly on the high voltage power distribution network. Any voltage up to 25 KV, 3 phases, 4-wire system. The boiler shell and cage must be grounded to the building steel and ground mat.

Warranty

All our Immersed Electrode Boilers are warranted for 18 months (from date of delivery) against defective workmanship and material. Warranty limited to replacement of defective parts only, when returned, prepaid, to the factory. Refer to Sequoia Limited Warranty document for additional details.

The information in this bulletin is a general description of the units. All specifications are subject to change without notice. Installation, maintenance, operating and any other instructions furnished with the equipment must be carefully followed by installers, owners and users.

Specifications and Dimensions

Model	Voltage (kV)	Max Power Capacity (kW)	Steam Generation (212°F) feed Water at 175 psi (12 bar)Lbs/hr (T/hr)	Pressure Available psi (bar)	Boiler Diameter inch (mm)	Boiler Height inch (mm)	Initial Clearance Height for Power Feeds Insertion inch (mm)
CEJWS-6	4.16 - 6.9	2,500 - 4,200	8,300 (3.8) - 14,000 (6.4)	100 (6.9) to 300 (21)	83 (2,100)	205 (5,200)	250 (6,400)
	10 - 13.8	6,000 - 10,000	20,100 (9.1) - 33,500 (15.2)				
CEJWS-10	4.16 - 6.9	4,200 - 7,000	14,000 (6.4) - 23,400 (10.6)		100 (2,500)	225 (5,700)	270 (6,900)
	10 - 13.8	10,000 - 15,000	33,500 (15.2) - 50,200 (22.8)				
	20 - 25	18,000	60,300 (27.4)				
CEJWS-15	4.16 - 6.9	6,500 - 10,000	21,700 (9.9) - 33,500 (15.2)		100 (2,500)	248 (6,300)	310 (7,800)
	10 - 13.8	15,000 - 20,000	50,200 (22.8) - 67,000 (30.4)				
	20 - 25	27,000	90,400 (41.1)				
CEJWS-20	4.16 - 6.9	7,500 - 12,000	25,100 (11.4) - 40,200 (18.2)		115 (2,900)	270 (6,900)	355 (9,000)
	10 - 13.8	20,000 - 25,000	67,000 (30.4) - 83,700 (38)				
	20 - 25	32,000	107,000 (48.7)				

Besides the standard models, Sequoia S immersed electrode steam boilers are available to meet specific capacity and operating conditions by doubling the number of electrodes.



Heating and Hot Water Solutions

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