



# LVR

## Electric Hydronic Boiler

90 to 540 kW  
335 to 1850 MBtu



A Clever-Brooks  
Sustainable Solution



# Your Journey Toward Decarbonization Just Got Easier

With the addition of the Cleaver-Brooks LVR Electric Hydronic Boiler to our electric boiler catalog, we provide a solution that simplifies electric boiler integration for any project, be it a new construction or retrofit application.

The LVR Electric Hydronic Boiler is one of many products that Cleaver-Brooks offers to support your sustainability goals of decarbonization, emissions reduction and energy efficiency.

Because they utilize electricity as a fuel source, these compact, economical units deliver maximum output with no local emissions.

## **Our electric boiler solutions can:**

- » Reduce or eliminate dependency on fossil fuels up to 100%
- » Leverage renewable energy sources to increase process efficiency to nearly 100%
- » Reduce your on-site CO<sub>2</sub> emissions or eliminate emissions completely when using a clean energy source



Our LVR Electric Hydronic Boiler meets the strict performance and sustainability criteria required to earn the Cleaver-Brooks Sustainability Seal. Learn more at [cleaverbrooks.com/sustainability](https://cleaverbrooks.com/sustainability).

# Features / Advantages

For areas affected by allocations or interruptions of natural gas and costly oil supplies, electric boilers provide a dependable source of heating or process hot water.

Offering a clean alternative to fossil fuels, the LVR enables users to take advantage of lower energy rates during off-peak periods.

- » **Ultra-Compact Design** – Best-in-class BTU to cu/ft footprint, simple to install and ideal for quick replacement scenarios with the ability to fit through a standard 34 inch commercial doorway
- » **No complex gas or fuel supply piping required** – offering reduced installation costs and rapid deployment
- » **Quiet by design** – Well suited for noise-sensitive areas
- » **Serviceability** – Inherently simple design allowing easy mechanical access for maintenance
- » **Flexible Fuel Supply** – Electricity is readily available from several sources including renewables, such as wind, solar and hydroelectric power
- » **Zero Local Emissions** – 100% emissions-free and well suited for decarbonization or site emissions-reduction projects
- » **High Efficiency** – Nearly 100% efficient at all operating points
- » **Full Modulation and Optional Infinite Turndown** – Uses only the amount of electrical energy required in response to system demand



NEARLY  
**100%**  
EFFICIENT



**Cleaver-Brooks  
stands behind its equipment**

**2-year** comprehensive parts warranty  
**10-year** pressure vessel warranty

# Why Choose Our Electric Boilers?

## » Durable and Reliable

Electric boilers use individually replaceable, heavy-duty electric resistance heating elements. A modular element bundle design provides ease of replacement and built in redundancy.

## » Quality and Consistent Manufacturing

Each packaged unit is quality tested in an ISO-certified shop and certified in accordance with stringent ASME and (c)UL standards.

## » Packaged Hydronic System

Available as part of a Cleaver-Brooks skidded boiler room package for ease of installation.



Suitable for up to 50% glycol mixtures, excellent for snow-melt applications.



Count on consistent temperature control and operational reliability.



Compact footprint and quiet operation enable use in places with limited mechanical room space and noise limits.

# Compact, Quiet and Highly Efficient

## Standard Features

### Boiler:

- » ASME Section IV coded vessel 160 PSIG class
- » UL/cUL listed
- » Integral steel frame
- » Incoloy 800 heating elements
- » Fiberglass insulation, 2"
- » ASME pressure-relief valves
- » Heavy-duty steel jacket
- » Forklift skid base

### Trim:

- » Standard proportional temperature control or advanced PLC control with color touch-screen HMI
- » Manual reset high-temperature control
- » Main low-water cutoff and test switch
- » Pilot light: Control power on, low water, temperature and step status

### Control:

- » Step controller
- » Operating limit control
- » High limit control
- » Alarm buzzer and silencing switch

### Electrical Equipment:

- » 200,000 AIC-rated fuses
- » Contactors tested to 10,000,000 cycles
- » Control circuit step-down transformer
- » Customer connection terminal strip
- » Primary connection lug
- » Up to 100 KA SCCR rating available
- » Secure door lock when unit is energized

## Enhance Your LVR

### Skid Systems

Cleaver-Brooks pre-engineered and pre-packaged, skid-mounted hydronic boiler solutions offer a simple solution to get up and running in less time, with less effort than traditional field-installed systems. Single-point piping and electrical connections, and robust skid design make installation simple and easy.

Skids can be built as combination electric/natural gas to cover critical process redundancy requirements in special applications.

A central load controller allows you to switch energy sources based on varying energy rates.



### HxO Heat Exchanger

The HxO is designed to provide instantaneous domestic hot water supply to your building without the need for additional fuel-fired or electric heating equipment. By utilizing your new or existing hot water heating loop, the HxO will provide on-demand water for your system.



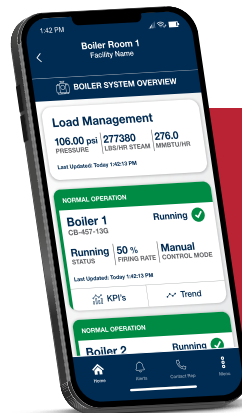
# Optional Controls to Match System Requirements Easily

## PLC Control with 7" Color Touch-screen:

- » Advanced PID loop control with user-friendly adjustability
- » Operation and monitoring of a fully modulating SCR control
- » Individual step monitoring and automatic rotation
- » Adjustable power-limiting scheme with scheduling
- » Weekly setpoint scheduling with outdoor sensor reset
- » Isolation valve control with adjustable timers
- » Adjustable pump control with adjustable timers
- » Adjustable variable-speed pump control
- » Built-in power metering with trending totalizer
- » Native BACnet functionality, TCP/IP or MSTP
- » Alarm buzzer silenced on HMI

## Customize Your Boiler:

- » SCR control for a fully modulating step, offers enhanced set point tracking which translates to energy savings while increasing contactor life expectancy.
- » Mounted fused manual disconnect with door interlock offering SCCR protection to 100 KA RMS for models up to 360 Kw with protection to 65 KA RMS (450 and 540 KW provided with shipped loosed fused disconnect)
- » Choice of non-standard safety valves: 30, 50, 60, 75, 80, 100, 125, 150



**prometha®**

### Prometha® Connectivity

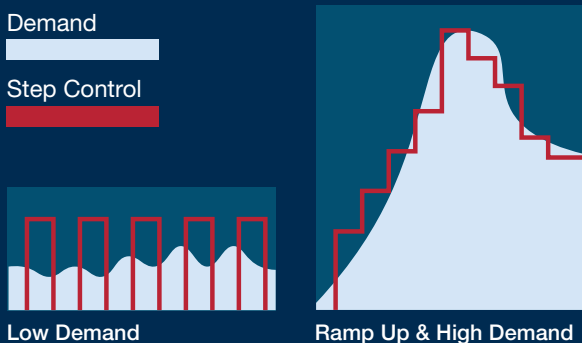
Prometha provides real-time insights into boiler status and performance, helping quantify your investment, optimize efficiency, and support sustainability goals.

## Proven SCR/Thyristor Control Strategy for Infinite Turndown

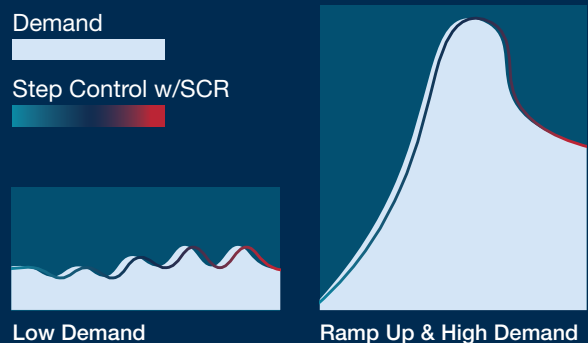
Using the same concept as variable-speed drive technology, SCR control is an option to improve an electric boiler step control scheme. The SCR enables true linear-modulation control with infinite turndown,

provides precise boiler supply temperature control, reduces electrical contactor cycling, decreases power surges, and allows for higher operational efficiencies at low flow rates.

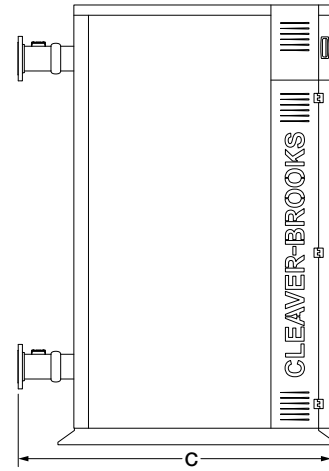
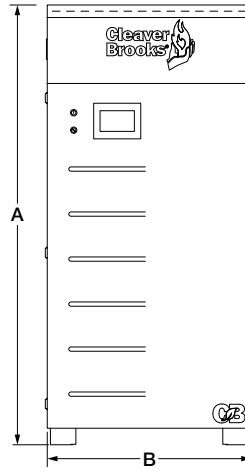
### Demand vs. Step Control



### Demand vs. Step Control w/SCR



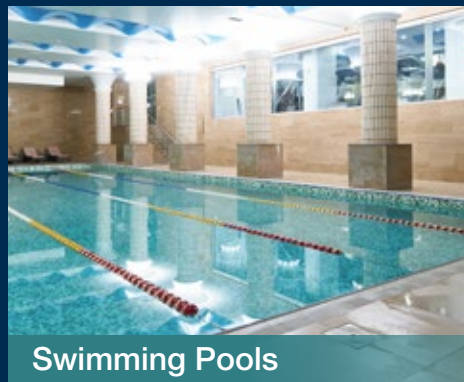
# LVR Dimensions and Ratings



	LVR-90KW	LVR-180KW	LVR-270KW	LVR-360KW	LVR-450KW	LVR-540KW
Overall Height ("A" - inch)	59.0	59.0	63.0	63.0	66.0	66.0
Overall Width ("B" - inch)	22.0	22.0	28.0	28.0	33.0	33.0
Overall Depth ("C" - inch)	42.0	42.0	50.0	50.0	61.0	61.0
Dry Weight (lb)	875	900	1,375	1,400	1,775	1,800
Water Volume (US gallon)	51.5	51.5	115	115	167	167
Connections (ANSI 150)	3" Flanged	3" Flanged	3" Flanged	3" Flanged	4" Flanged	4" Flanged
Available Voltages	480/600	480/600	480/600	480/600	480/600	480/600

## Broad Range of Applications

- » Healthcare
- » Schools
- » Apartments
- » Government
- » Bacterial Digester Pools
- » Swimming Pool
- » Thermal Storage
- » Building Heat
- » Supplemental Heat for Heat Pumps



Swimming Pools



Healthcare



Digester Systems



Campus Systems



Multi-Family Housing



## The power of total integration.

The **Power of Total Integration** is how Cleaver-Brooks delivers the world's broadest range of integrated, sustainable boiler plant solutions. In addition to our products, this includes our global representative and service network, training resources, and trusted expertise that add significant value to your Cleaver-Brooks investment.



Use this QR code to access more resources for electric and electrode boilers.

