WEIL-McLAIN®

www.weil-mclain.com

EVERGREEN®
HIGH EFFICIENCY CONDENSING BOILER

Water | Natural/Propane Gas | 70-399 MBH | 6 Sizes
Direct Vent | 95% AFUE*

EASY HEAT, EFFORTLESS COMORT

Evergreen

We've got you covered. All come equipped with the same great Evergreen features:

- Fire tube stainless steel heat exchanger
- Integrated precision control
- Advanced multi-zone capacity

- ENERGY STAR® Most Efficient 95% AFUE* rating
- Set-up wizard for easy install
- Floor standing and wall-hung capable

*Evergreen 399 rating is combustion efficiency

AHRI CERTIFIED™

energy ENERGY STAR

DURABLE	FLEXIBLE	EASY
Stainless steel fire tube heat exchanger	24-zone capacity Floor standing/wall mount	Control presets Accessible parts

APPLICATIONS

The Evergreen® boiler extends comfort levels to every area of your property for the long run. The Evergreen is perfect for residential applications or light commercial and single or multi-unit installations with **ZoneStacking**® up to 24 programmable zones. It's everything you want in heating: quiet operation, aesthetically pleasing design, floor standing or wall mount options, environmental sustainability, heating comfort with lower utility bills* and more.

EASE OF INSTALLATION

- Setup wizard efficiently guides the installer through a single or multiple boiler installation in minutes
- For the contractor, installer and/or service provider, the Evergreen has an easy to understand graphical user Interface and makes programming and monitoring operations simple
- Wiring diagrams provided are clear and easily accessible

EASE OF USE

- Interactive diagnostic capability
- Reliable operation
- Easy to understand and monitor controls
- Effortless heating and comfort in all zones

EASE OF MAINTENANCE

- Large, accessible panels for quick and easy maintenance checks
- Interactive diagnostic capability provides a snapshot of the past and current operation parameters
- Reliable operation of the complete heating system including radiant elements
- Sentinel X100® inhibitor is included with the boiler to ensure the water chemistry is optimal for heating system efficiency

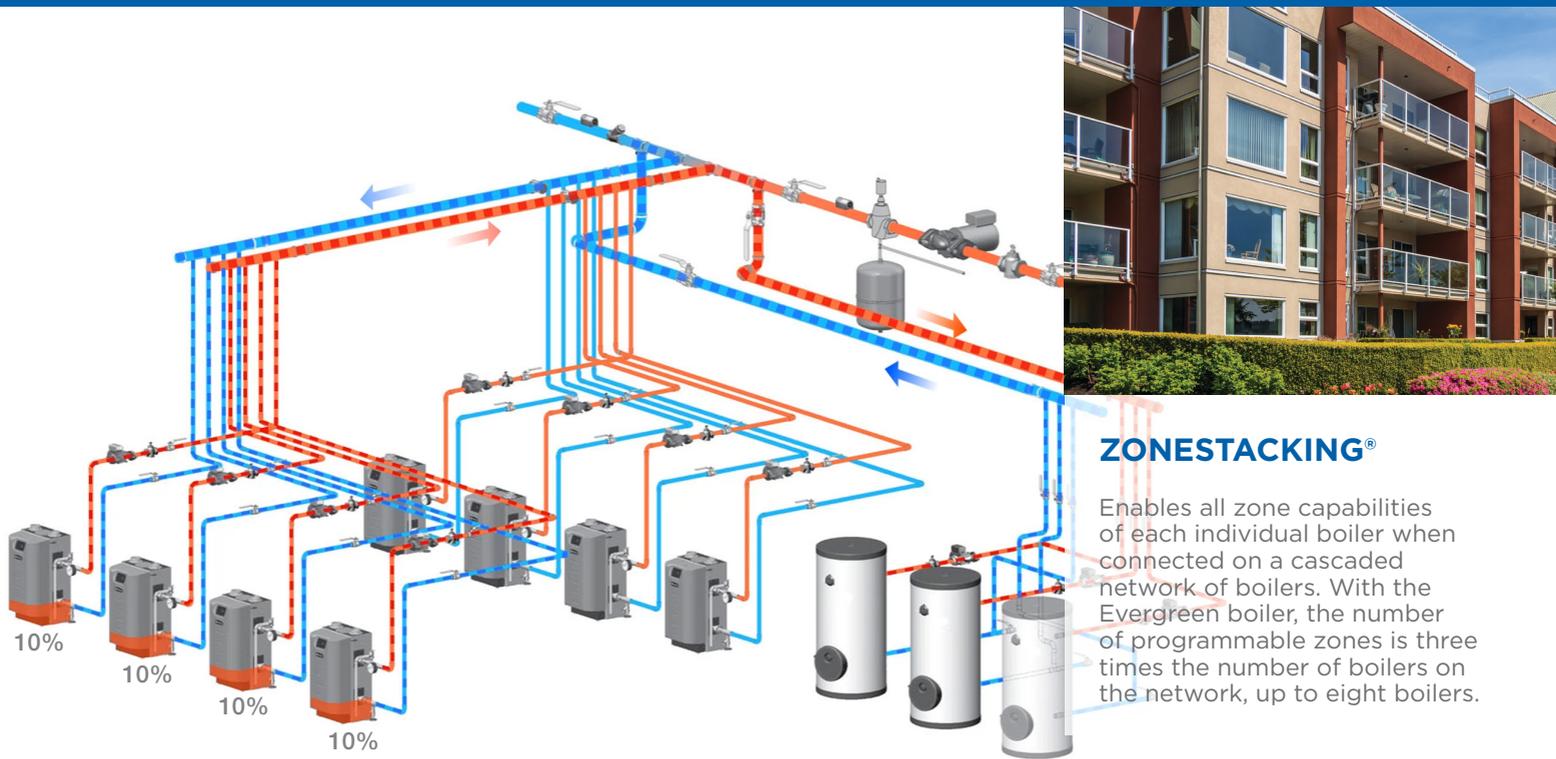*Federal tax credit available in qualifying areas

RESIDENTIAL

Stay *effortlessly comfortable* in any home environment with the new Evergreen boiler. The quiet operation of the Evergreen further enhances the sense of "invisible" heat, from multiple in-home zones to pool heating.

- The Evergreen's sleek, modern design adds value to the home or property.

- Ease of programmability makes achieving comfort simple.

- For the homeowner who wants heating comfort while maintaining lower utility bills and reducing their carbon footprint, the Evergreen 70-299 boilers are recognized as Most Efficient by ENERGY STAR® standards with an AFUE rating of 95%. This could qualify the homeowner for available local utility rebates, if available. The Evergreen's smooth performance adds to the greener environment sustainability.

The high performance of the Evergreen boiler works seamlessly with the efficient and durable AHRI Certified™ Weil-McLain AquaPlus® Indirect Fired Water Heaters, available in five sizes to meet demanding hot water applications.

10%

10%

10%

10%

ZONESTACKING®

Enables all zone capabilities of each individual boiler when connected on a cascaded network of boilers. With the Evergreen boiler, the number of programmable zones is three times the number of boilers on the network, up to eight boilers.

COMMERCIAL

Familiar interface - innovative technology

As our technology has advanced to create smoother, more efficient operations, we've kept the interface of the Evergreen boiler familiar, simple to use and easy to learn.

- For the residential and light commercial customer who requires a multiple boiler setup, the Evergreen provides ZoneStacking - 24 zone capability without an additional external 3rd party control.

- ZoneStacking reduces the installation costs and time while increasing reliability. With this advanced control feature, the Evergreen boiler maintains optimal efficiency through lead-lag rotation and balanced heat loading.

- Compatible with the SlimFit® commercial boilers (550, 750 Series 3; 1.0-2.0 Series 2), to connect and operate in unison.

SIMPLE INTERFACE – COMPLEX CALCULATIONS

Straightforward, user-friendly design with advanced technology.

What's happening behind the scenes? Complex calculations of the required energy to meet system demands is distributed across all the boilers in the network.

System maximizes user's comfort by simultaneously meeting as many system demands as possible: When there are multiple requests on a cascaded boiler system, the control satisfies both local and network heating demands.

Setup is easy. The built-in wizard asks direct questions on setup, making customization easy and straightforward. Contextual help is also available on screen.

INNOVATIVE CONTROL SYSTEM FEATURES

- 3 programmable priorities for up to three heat inputs
- Text display for easy operation monitoring and diagnostics
- 0-10 VDC input modulation
- Additional heat demand contact for hybrid system
- Integrated low water protection
- Dual temperature sensors on boiler outlet and flue
- Blower speed modulation

Visual Communication Screens
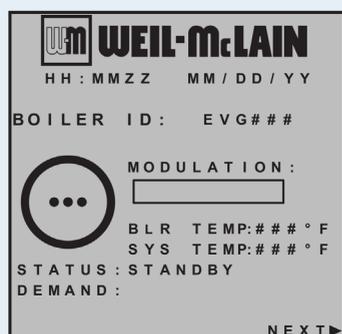
STANDBY
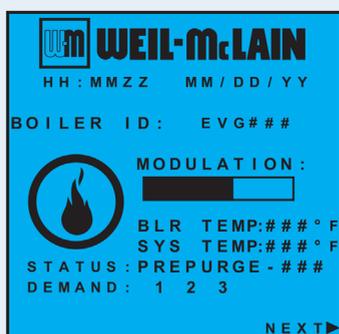
SPACE HEATING

WATER HEATING

CHECK SYSTEM

SPECIFICATIONS

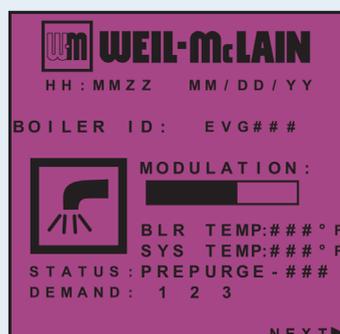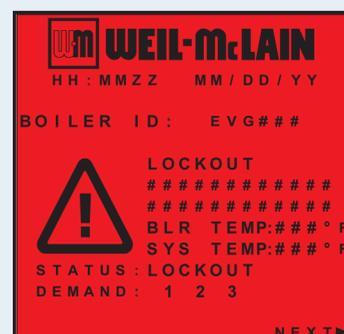| MODEL	EVG 70	EVG 110	EVG 155	EVG 220	EVG 299	EVG 399
CSA INPUT (MBH)	70	110	155	220	299	399
DOE HEATING CAPACITY (MBH)	65	101	143	206	280	383*
NET AHRI (MBH)	57	88	124	179	243	333
DOE AFUE	95.2%	95.0%	95.1%	95.0%	95.0%	96.5%*
VENT MATERIAL	PVC, CPVC, PP, SS (AL29-4C)	PVC, CPVC, PP, SS (AL29-4C)	PVC, CPVC, PP, SS (AL29-4C)	PVC, CPVC, PP, SS (AL29-4C)	PVC, CPVC, PP, SS (AL29-4C)	PVC, CPVC, PP, SS (AL29-4C)
VENT/COMBUSTION AIR CONNECTION DIAMETER	3″	3″	3″	4″	4″	4″
VENT/COMBUSTION AIR PIPE SIZE	2″ or 3″	3″	3″	3″ or 4″	4″	4″
VENTING LENGTH	100′	100′	100′	100′	100′	100′
MIN. RECOMMENDED PIPE SIZE	1″	1″	1¼″	1¼″	1½″	1½″
SUPPLY/RETURN TAPPING	1″	1″	1¼″	1½″	1½″	1½″
GAS CONNECTION SIZE	½″	½″	½″	¾″	¾″	¾″
APPROX. SHIPPING WEIGHT (Lbs.)	125	125	145	215	260	260
WATER VOLUME (Gal.)	2.5	2.5	3.2	4.6	7.0	6.7

Evergreen 399 ratings are gross output and combustion efficiency

FEATURES:

BOILER
- Stainless steel fire-tube heat exchanger
- Non-metallic heat exchanger base
- Floor standing or wall-mount
- Natural or LP gas
- Negative regulated combustion
- 5 to 1 turndown ratio (70-155)
- 10 to 1 turndown ratio (220-399)
- Boiler circulator
  - Taco ECM 007e (70/110)
  - Taco ECM 0015e (155)
  - Taco 0014 (220/299)
  - Taco 0013 (399)
- Propane conversion kit
- Low water cut-off
- Water treatment – inhibitor & test kit

VENTING*
- Direct vent 100 ft. for intake and 100 ft. for vent
- Dual pressure zones (220-399)
- Common combustion air

Please call your local Weil-McLain sales office for additional venting options

CONTROL FEATURES
- Easy installation with Setup Wizard
- Zone and/or priority based control
- Three thermostat inputs
- Outdoor reset for each priority
- Rate adjustable per priority
- 0-10V input (modulation or setpoint)
- Four total outputs
  - 1 dedicated boiler circulator output
  - 3 additional outputs can be used with circulators, dampers, or system aux
- Aux inputs – flow switch or end switch
- Aux outputs – system pump or damper
- Modbus® connectivity
- Additional heat demand contact

JACKET ASSEMBLY
- Fully removable jacket front door
- Adjustable boiler legs
- On/off power switch (220-399)
- Line voltage service receptacle (220-399)
- Mounting bracket ready for wall-mount kit
  - Shipped standard with 70-155
  - Optional kit for 220-399
- Condensate trap

OPTIONAL EQUIPMENT:
- Wall-mount kit (220-399)
- Concentric vent kit
- Condensate neutralizer kit
- Sidewall vent/air termination kit
- Maintenance kits

AHRI CERTIFIED™   ASME H   CSA C US   DESIGN CERTIFIED®   DOE   ENERGY STAR

DIMENSIONS

MODEL 70-155

¾"
17"
1"
5⅝"
5¼"
4⅝"

2"
18¾" 40¾"
10⅛"
5¾"
18⅝"

12⅞"
6⅛"
9¾"

19⅛"
3¹⁄₁₆"
¾"
17⅝"
(with jacket door)

MODEL 220-399

⅜"
1"
23"
2½"
6½"
22¾"

4⅛" 14¾"

45"
43¹⁄₁₆"

220 = 18¾"
299/399 = 20¾"
12⅛"

8¹⁵⁄₁₆"
9⅝"
1¼"
8"
¾"
16⅝"

MULTIPLE BOILER SEQUENCING

The flexibility of the Evergreen boiler system reduces setup time and keeps costs down.

SERIES Sequencing	PARALLEL Sequencing	SMART Sequencing

Higher Part-Load Efficiency ➡️

⬅️ **Quicker Boiler Response Time**

STAGE 1 – Lead boiler modulates up to a maximum of 100% before turning on the next boiler in the sequence. The STABILIZE TIME allows time for the boilers to modulate to meet system demand before turning on additional boilers.

STAGE 1 – Lead boiler modulates up to a maximum of Base Rate High before turning on the next boiler in the sequence. The STABILIZE TIME allows time for the boilers to modulate to meet system demand before turning on additional boilers.

STAGE 1 – Lead boiler modulates up to a low firing rate before turning on the next boiler in the sequence. The STABILIZE TIME allows time for the boilers to modulate to meet system demand before turning on additional boilers.

STAGE 2 – Boiler #2 in sequence ignites and both boilers modulate to so their combined energy output matches the energy output of Boiler #1 at 100%. After a short MOD DELAY TIME, the boilers will be released to modulate.

STAGE 2 – Boiler #2 in sequence ignites and both boilers modulate to so their combined energy output matches the energy output of Boiler #1 at Base Rate High. After a short MOD DELAY TIME, the boilers will be released to modulate.

STAGE 2 – Boiler #2 in sequence ignites and both boilers modulate to BASE RATE LOW. After a short MOD DELAY TIME, the boilers will be released to modulate.

STAGE 3 – Both boilers modulate up to a maximum of 100% before turning on the next boiler in the sequence. The STABILIZE TIME allows time for the boilers to modulate to meet system demand before turning on additional boilers.

STAGE 3 – Both boilers modulate up to a maximum of Base Rate High before turning on the next boiler in the sequence. The STABILIZE TIME allows time for the boilers to modulate to meet system demand before turning on additional boilers.

STAGE 3 – Both boilers modulate up to a low firing rate before turning on the next boiler in the sequence. The STABILIZE TIME allows time for the boilers to modulate to meet system demand before turning on additional boilers.

STAGE 4 – Boiler #3 in sequence ignites and then all boilers modulate to so their combined energy output matches the energy output of Boilers #1 and #2 at 100%. After a short MOD DELAY TIME, the boilers will be released to modulate.

STAGE 4 – Boiler #3 in sequence ignites and then all boilers modulate to so their combined energy output matches the energy output of Boilers #1 and #2 at Base Rate High. After a short MOD DELAY TIME, the boilers will be released to modulate.

STAGE 4 – Boiler #3 in sequence ignites and then all boilers modulate to BASE RATE LOW. After a short MOD DELAY TIME, the boilers will be released to modulate.

STAGE 5 – After all available boilers are firing, boilers are release to modulate up to 100% of rate.

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THREE SELECTABLE SEQUENCING MODES TO CHOOSE FROM

- **Series Sequencing** Quickest- boiler goes to 100% before another boiler is turned on; output is achieved more quickly with less total burner hours

- **Parallel Sequencing** Efficiency and speed-based on Base Rate High; Hybrid mode between Smart and Series modes; boilers will go to user-programmed base rate high before turning on the next boiler

- **SmartSequencing®** Most efficient- maximizes part-load efficiency by turning on as many boilers as possible

PROGRAMMABLE PREFERENCES FOR MULTIPLE BOILER SETUPS

- **Multiple Boiler Sequencing** User selects what point one boiler stops modulating before turning on another boiler

- **Lead Lag Rotation** User selects which boiler turns on first and can choose based on burner hours, fixed rotation or no rotation

- **Input/Output Options** Input and outputs can be used for every boiler with up to 24 capable input/output pairs

- **Redundant Sensors** If one system supply or outdoor temperature sensor fails, there are backups. If backups fail, the system can still run on a special safety mode

- **Auxiliary Output Flexibility** Ability to control system circulators, combustion air dampers and/or other auxiliary system components

WEIL-McLAIN®