

HLR210 – HLR510 Hot Water Boiler Series



Features

- Design Pressure 150psi
- Design Temperature 250°F
- All boilers are manufactured in accordance with the requirements of the A.S.M.E. Boiler and Pressure Vessel Code and A.S.M.E. CSD-1. Each boiler bears the National Board Stamp "H"
- Shell fiberglass insulation thickness minimum 2"
- Power range 210kW - 510kW with up to 8 heating stages, depending on model
- Heating stages controlled by Honeywell T775 boiler controller

Standard Equipment of Each Boiler Includes:

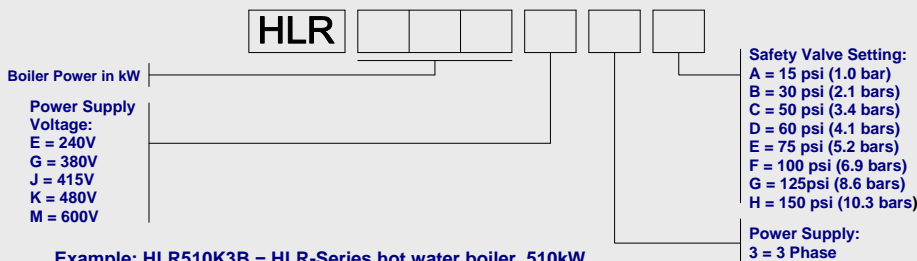
- A.S.M.E. pressure relief valve
- One (1) primary high temperature cutoff control with automatic reset and one (1) secondary high temperature cutoff control with manual reset
- One (1) low water cutoff control with manual reset
- PID-step controller with number of heating stages depending on the boiler heating power
- Digital readout of the operating temperature
- Magnetic contactors
- Internal branch circuit fusing
- Main supply power distribution block
- Indicator lights for POWER, HEATING, CIRCULATOR PUMP and ALARMS
- Pressure and temperature gauge

Applications:

- Space heating
- Tank heating
- Heat pump backup
- Swimming pool heating
- Bio-Diesel reactors
- De-icing

MODEL	Capacity		NO. OF STEPS	VOLTS ⁽¹⁾ 50/60Hz	PHASE	INLET & OUTLET SIZE	20°F (11°C) TEMP. RISE WATER FLOW G.P.M.(L/min)	PRESSURE VESSEL CAPACITY GAL. (L)	OPERATING TEMPERATURE RANGE °F (°C)	APPROX. SHIPPING WEIGHT LBS. (kg)
	BTU/H	KW								
HLR-210	717,000	210	7	240/380/415/480/600	3	3" NPT	75 (282)	78 (295)	35 (1) – 225 (107)	1,440
HLR-240	819,000	240	8	380/415/480/600	3	3" NPT	85 (322)	78 (295)	35 (1) – 225 (107)	1,510
HLR-300	1,023,000	300	8	380/415/480/600	3	3" NPT	107 (403)	78 (295)	35 (1) – 225 (107)	1,560
HLR-360	1,228,000	360	8	380/415/480/600	3	4" FLANGED	128 (483)	78 (295)	35 (1) – 225 (107)	1,720
HLR-420	1,433,000	420	8	380/415/480/600	3	4" FLANGED	149 (564)	78 (295)	35 (1) – 225 (107)	1,780
HLR-510	1,740,000	510	8	380/415/480/600	3	4" FLANGED	181 (685)	78 (295)	35 (1) – 225 (107)	1,830

Model Number Key



⁽¹⁾ Each boiler model requires two (2) power supplies: Heating power and control voltage. Nominal control voltage is 120V AC. Boiler models rated for 380V and 415V are equipped with control voltage transformers that require 220/240V applied to their primary side in order to provide the 120V AC control voltage to the boiler. As an option, all boiler models can be equipped with control voltage transformers so that only the heating power supply needs to be connected to the boiler.

Example: HLR510K3B = HLR-Series hot water boiler, 510kW heating power, power supply 480V, 3ph, safety valve set to 30psi.

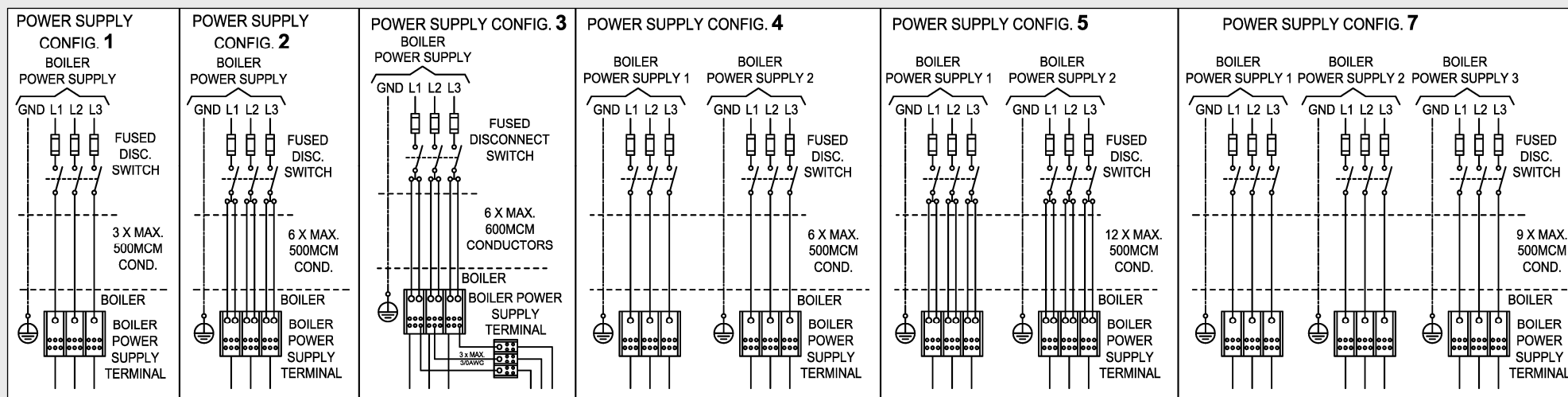
Please note that all information provided within this brochure is approximate and subject to change without notice. Please contact Reimers Electra Steam, Inc. with any questions regarding the specifications or dimensions detailed within.

Electrical Specifications

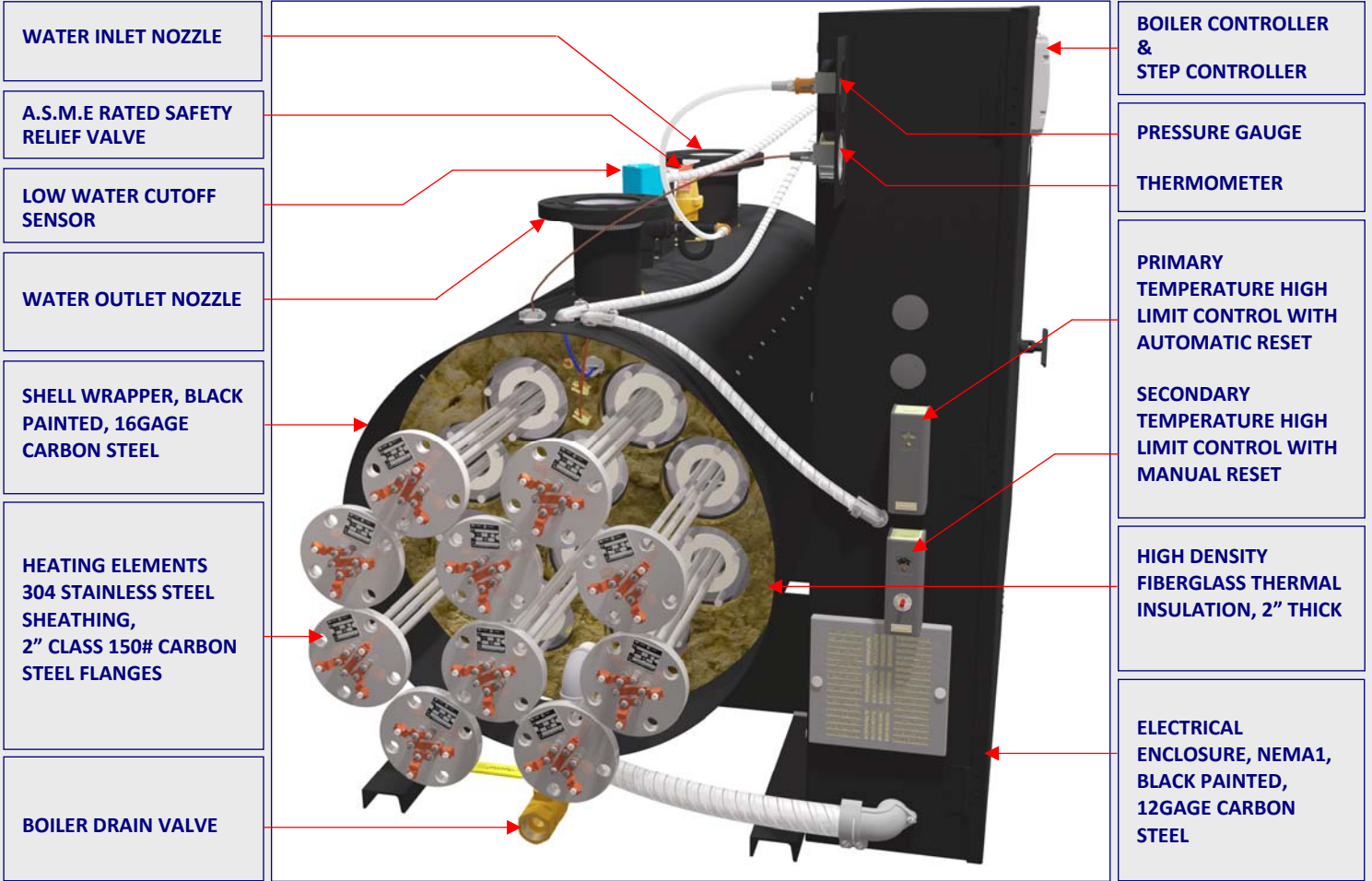
BOILER HEATING POWER kW	VOLTAGE V	PHASE	INTERNAL ELEMENT WIRING AWG (mm ²)	NUMBER & SIZES OF CONTACTORS (RES. LOAD)	NUMBER & SIZE OF ELEMENTS	POWER SUPPLY CONFIGURATIONS ⁽¹⁾																
						OPTION 1					OPTION 2				OPTION 3							
						NOM. AMP DRAW POWER INCOME		MIN. REQU. N.E.C. SERVICE	MIN. REQU. CONDUCTOR SIZE 75°C ⁽²⁾	CONFIG.	NOM. AMP DRAW			MIN. REQU. N.E.C. SERVICE	MIN. REQU. CONDUCTOR SIZE 75°C ⁽²⁾	CONFIG.	NOM. AMP DRAW			MIN. REQU. N.E.C. SERVICE	MIN. REQU. CONDUCTOR SIZE 75°C ⁽²⁾	CONFIG.
						1	2				1	2	3				1	2	3			
A	A	A	AWG/MCM		A	A	A	A	AWG/MCM		A	A	A	A	AWG/MCM							
210	240	3	6 (13.3)	7 x 93A	7 x 30kW, 240V, 3ph	505.2		631.5	6 x 400MCM	2	288.7	216.5		2 x 360.9	6 x 500MCM	4						
	380	3	8 (8.35)	7 X 75A	7 x 30kW, 380V, 3ph	319.1		398.8	6 x 4/0 AWG	2	182.3	136.7		2 x 227.9	6 x 4/0 AWG	4						
	415	3	8 (8.35)	7 x 50A	7 x 30kW, 415V, 3ph	292.2		365.2	3 x 500MCM	1												
	480	3	8 (8.35)	7 x 50A	7 x 30kW, 480V, 3ph	252.6		315.7	3 x 400MCM	1												
	600	3	10 (8.35)	7 x 50A	7 x 30kW, 600V, 3ph	202.1		252.6	3 x 300MCM	1												
240	380	3	8 (8.35)	8 x 75A	8 x 30kW, 380V, 3ph	364.6		455.8	6 x 250MCM	2	182.3	182.3		2 x 227.9	6 x 250MCM	4						
	415	3	8 (8.35)	8 x 50A	8 x 30kW, 415V, 3ph	333.9		417.4	6 x 4/0 AWG	2	166.9	166.9		2 x 208.6	6 x 4/0 AWG	4						
	480	3	8 (8.35)	8 x 50A	8 x 30kW, 480V, 3ph	288.7		360.8	3 x 500MCM	1												
	600	3	10 (8.35)	8 x 50A	8 x 30kW, 600V, 3ph	230.9		288.7	3 x 350MCM	1												
300	380	3	8 (8.35)	10 X 75A	10 x 30kW, 380V, 3ph	455.8		569.8	6 x 350MCM	2	227.9	227.9		2 x 284.9	6 x 350MCM	4						
	415	3	8 (8.35)	10 x 50A	10 x 30kW, 415V, 3ph	417.4		521.7	6 x 300MCM	2	208.7	208.7		2 x 260.9	6 x 300MCM	4						
	480	3	8 (8.35)	10 x 50A	10 x 30kW, 480V, 3ph	360.8		451.1	6 x 250MCM	2	180.4	180.4		2 x 225.5	6 x 250MCM	4						
	600	3	10 (8.35)	10 x 50A	10 x 30kW, 600V, 3ph	288.7		360.8	3 x 500MCM	1												
360	380	3	8 (8.35)	12 x 75A	12 x 30kW, 380V, 3ph	547.0		683.7	6 x 500MCM	2	273.5	273.5		2 x 341.9	6 x 500MCM	4						
	415	3	8 (8.35)	12 x 50A	12 x 30kW, 415V, 3ph	500.8		626.0	6 x 400MCM	2	250.4	250.4		2 x 313.0	6 x 400MCM	4						
	480	3	8 (8.35)	12 x 50A	12 x 30kW, 480V, 3ph	433.0		541.3	6 x 300MCM	2	216.5	216.5		2 x 270.6	6 x 300MCM	4						
	600	3	10 (8.35)	12 x 50A	12 x 30kW, 600V, 3ph	346.4		433.0	6 x 4/0 AWG	2	173.2	173.2		2 x 216.5	6 x 4/0 AWG	4						
420	380	3	8 (8.35)	14 x 75A	14 x 30kW, 380V, 3ph	638.1		797.7	6 x 600MCM	3	319.1	319.1		2 x 398.8	12 x 4/0 AWG	5	227.9	227.9	182.3	3 x 284.9	9 x 300MCM	7
	415	3	8 (8.35)	14 x 50A	14 x 30kW, 415V, 3ph	584.3		730.4	6 x 500MCM	2	292.2	292.2		2 x 365.2	6 x 500MCM	4						
	480	3	8 (8.35)	14 x 50A	14 x 30kW, 480V, 3ph	505.2		631.5	6 x 400MCM	2	252.6	252.6		2 x 315.7	6 x 400MCM	4						
	600	3	10 (8.35)	14 x 50A	14 x 30kW, 600V, 3ph	404.1		505.2	6 x 300MCM	2	202.1	202.1		2 x 252.6	6 x 300MCM	4						
510	380	3	8 (8.35)	17 x 75A	17 x 30kW, 380V, 3ph	410.2	364.6	2 x 512.8	12 x 300MCM	5	273.5	273.5	227.9	3 x 341.9	9 x 500MCM	7						
	415	3	8 (8.35)	17 x 50A	17 x 30kW, 415V, 3ph	375.6	333.9	2 x 469.5	12 x 250MCM	5	250.4	250.4	227.9	3 x 313.0	9 x 400MCM	7						
	480	3	8 (8.35)	17 x 50A	17 x 30kW, 480V, 3ph	613.4		766.8	6 x 600MCM	3	324.8	288.7		3 x 405.9	12 x 4/0 AWG	5	216.5	216.5	180.4	3 x 270.6	9 x 300MCM	7
	600	3	10 (8.35)	17 x 50A	17 x 30kW, 600V, 3ph	490.7		613.4	6 x 400MCM	2	259.8	230.9		2 x 324.8	6 x 400MCM	4						

(1) Specify Power Supply Configuration Option when ordering. If not specified, boiler will be ship configured with Option 1.

(2) The sizes shown in the above tabulation are the minimum required conductor sizes to be installed inside the boiler electrical enclosure as per the UL-File in which these boiler models are listed. The conductors must be rated at minimum 75°C. If the National Electrical Code (N.E.C.) or any other local code requires larger supply conductors at the boiler installation site then those conductor sizes shall be used.



Construction



WATER INLET NOZZLE

A.S.M.E RATED SAFETY RELIEF VALVE

LOW WATER CUTOFF SENSOR

WATER OUTLET NOZZLE

SHELL WRAPPER, BLACK PAINTED, 16GAGE CARBON STEEL

HEATING ELEMENTS 304 STAINLESS STEEL SHEATHING, 2" CLASS 150# CARBON STEEL FLANGES

BOILER DRAIN VALVE

BOILER CONTROLLER & STEP CONTROLLER

PRESSURE GAUGE

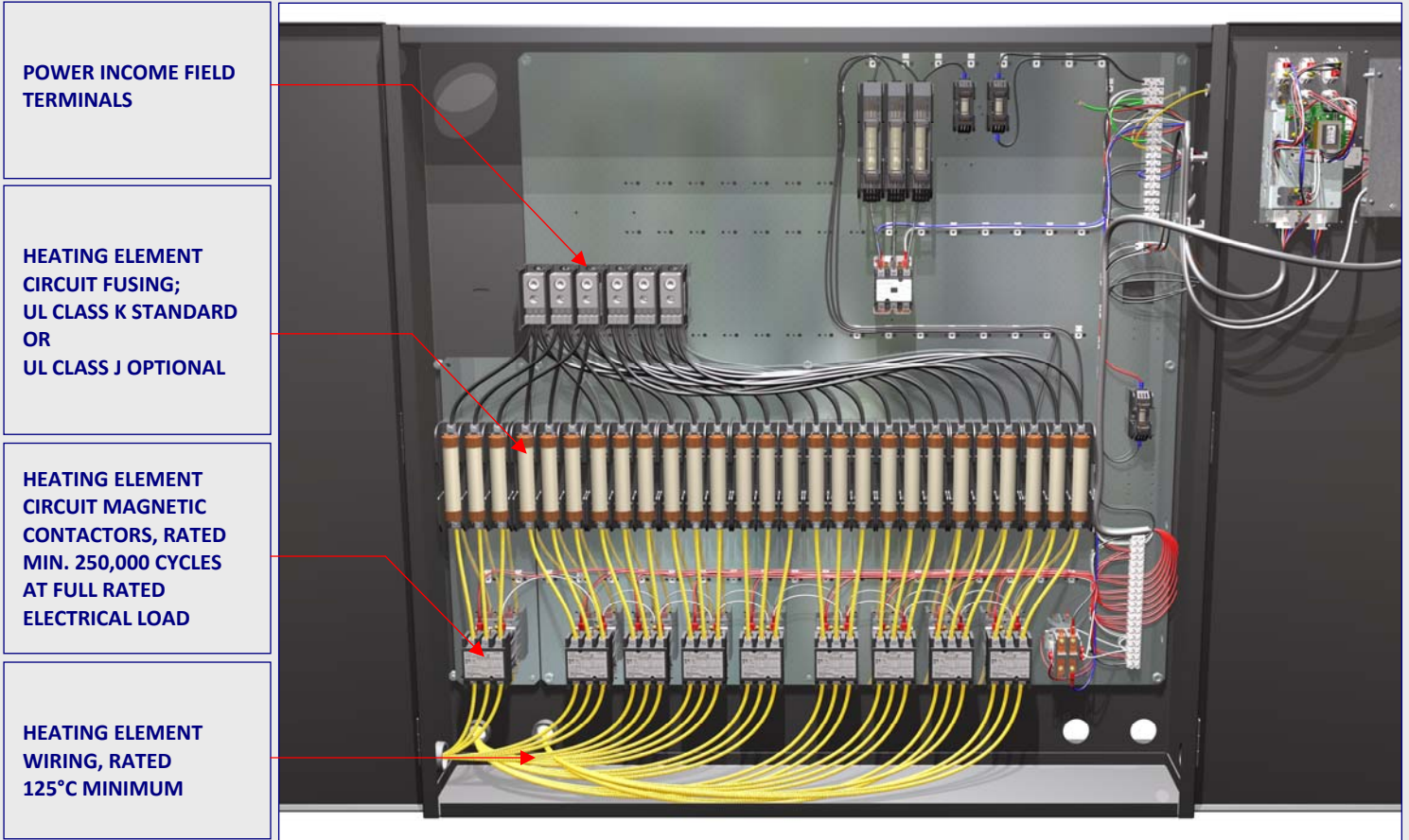
THERMOMETER

PRIMARY TEMPERATURE HIGH LIMIT CONTROL WITH AUTOMATIC RESET

SECONDARY TEMPERATURE HIGH LIMIT CONTROL WITH MANUAL RESET

HIGH DENSITY FIBERGLASS THERMAL INSULATION, 2" THICK

ELECTRICAL ENCLOSURE, NEMA1, BLACK PAINTED, 12GAGE CARBON STEEL



POWER INCOME FIELD TERMINALS

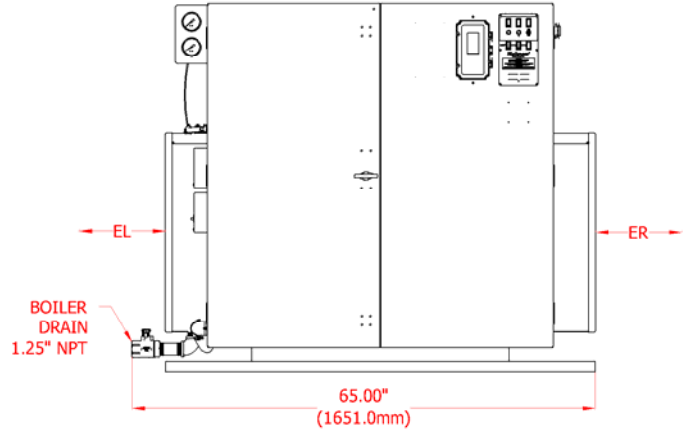
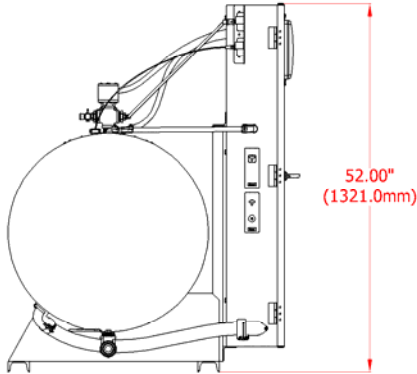
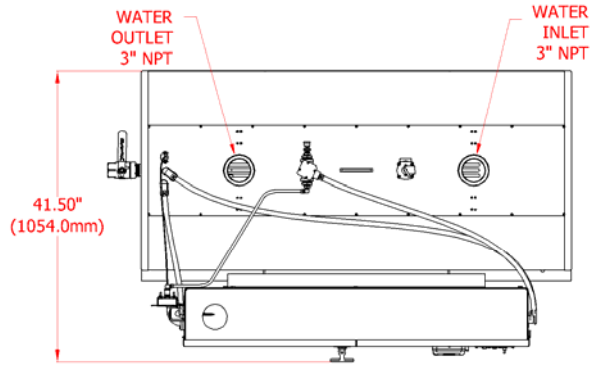
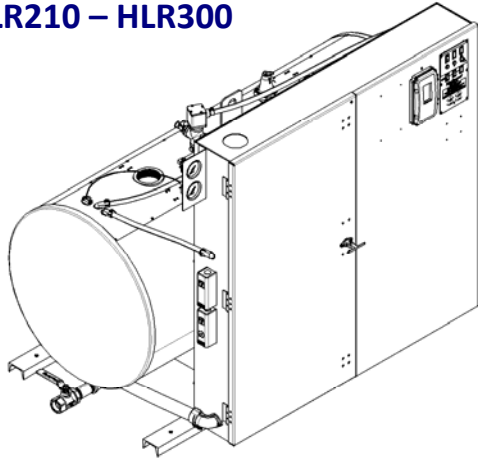
HEATING ELEMENT CIRCUIT FUSING; UL CLASS K STANDARD OR UL CLASS J OPTIONAL

HEATING ELEMENT CIRCUIT MAGNETIC CONTACTORS, RATED MIN. 250,000 CYCLES AT FULL RATED ELECTRICAL LOAD

HEATING ELEMENT WIRING, RATED 125°C MINIMUM

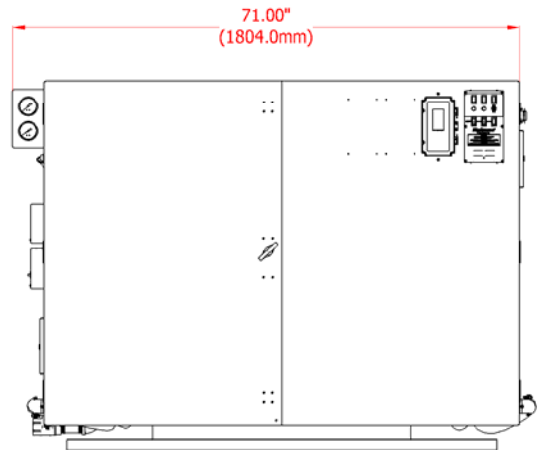
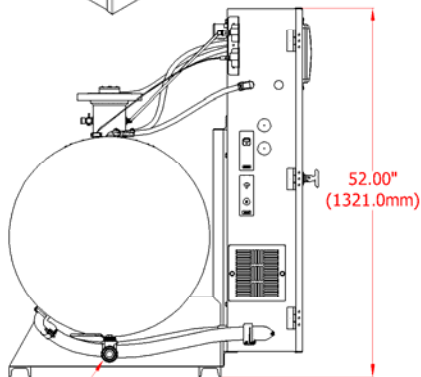
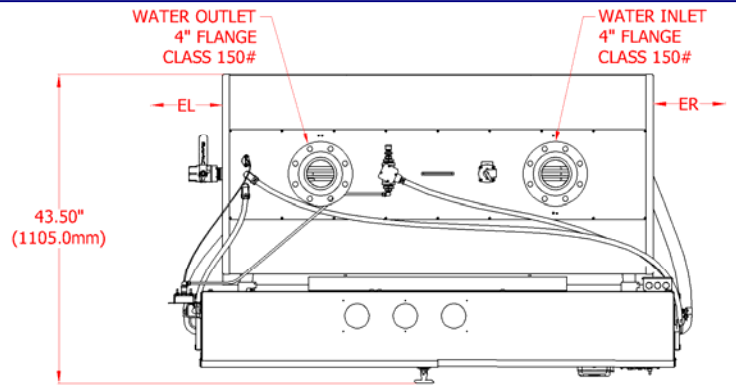
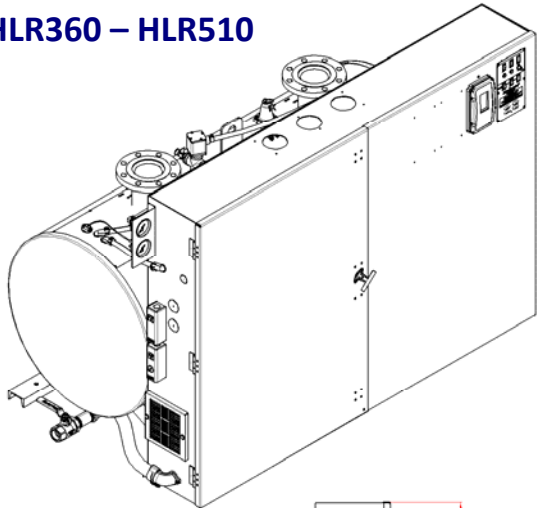
Dimensional Drawings (approximate*)

HLR210 – HLR300



REQUIRED CLEARANCE FOR ELEMENT REMOVAL (EL & ER)
HLR210 - 300: EL = 36" (915.0mm) ER = 0

HLR360 – HLR510



BOILER DRAIN
1.25" NPT

REQUIRED CLEARANCE FOR ELEMENT REMOVAL (EL & ER)
HLR360 - 510: EL = ER = 36" (915.0mm)

* Dimensions are approximate. Reimers Electra Steam, Inc. reserves the right to change dimensions without notice.

Optional Equipment

1. Control Voltage Transformer. When using this option, only the main power supply is required to operate the boiler.

Boiler Main Power Supply Voltage	Transformer Option Part Number		
	Boiler Model		
	HLR210	HLR240 – HLR420	HLR510
240V	OPT1010 - 240R	-	-
380V	-	OPT1010 - 380	OPT1011 - 380RH
415V	-	OPT1010 - 380	OPT1011 - 380RH
480V	-	OPT1010 - 480R	OPT1011 - 480RH
600V	-	OPT1010 - 600R	OPT1011 - 600RH

3. Flow Switch (Must be installed in the field)

Each boiler is equipped with field terminals for the connection of a flow switch. A flow switch installed in the boiler return line prevents the energizing of the boiler heating elements when it detects no water flow in the heating loop.

FLOW SWITCH: #02512

4. Timer Controlled Boiler On/Off, #OPT1017



Programmable timer for turning boiler on/off automatically

2. Auxiliary Low Water Cut-Off Options:



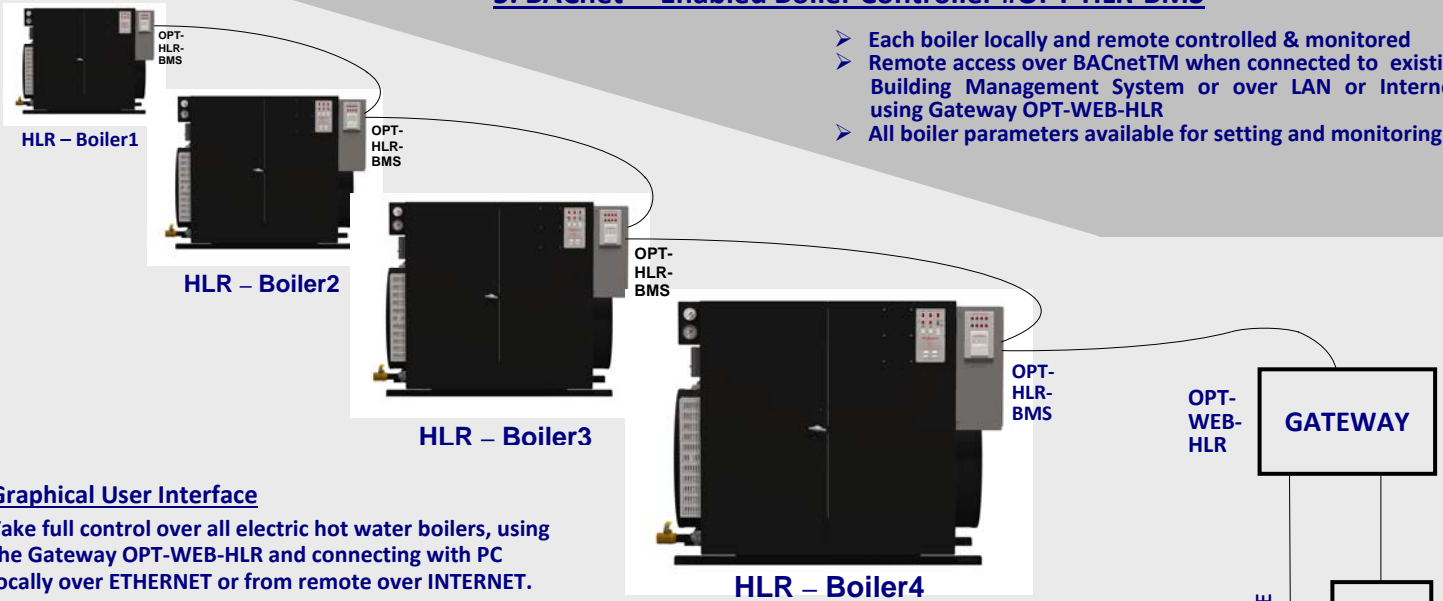
Auxiliary Low Water Cut-Off in external water column with conductive type probe: #OPT1034-PR



Auxiliary Low Water Cut-Off in external water column with float control: #OPT1034-FL

5. BACnet™ Enabled Boiler Controller #OPT-HLR-BMS

- Each boiler locally and remote controlled & monitored
- Remote access over BACnet™ when connected to existing Building Management System or over LAN or Internet, using Gateway OPT-WEB-HLR
- All boiler parameters available for setting and monitoring



Graphical User Interface

Take full control over all electric hot water boilers, using the Gateway OPT-WEB-HLR and connecting with PC locally over ETHERNET or from remote over INTERNET.

