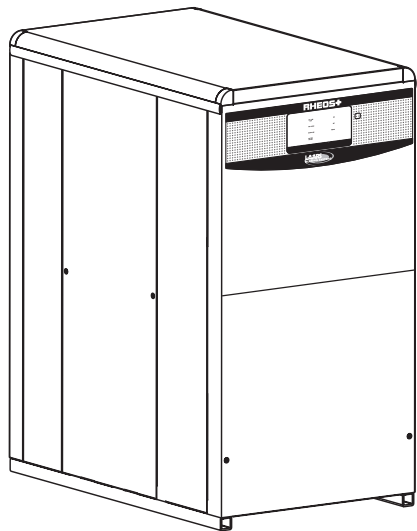


RHEOS®

Boiler & Water Heater

RHCH Hydronic Boiler

RHCV Volume Water Heater

Indoor/Outdoor Sizes 1200-2400**Submittal Data**

Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Project Name:

Location:

Contractor:

Standard Equipment

- Water flow switch
- Low water cutoff with test light & manual reset button
- Manual reset high limit
- High gas pressure switch
- Low gas pressure switch
- Air pressure switch
- Low-fire start time delay
- Modulation capabilities down to 50% of full fire
- ASME CSD-1
- Leak test valve
- Manual firing valve
- ASME 160 lb. w.p. heat exchanger
- Less than 10ppm NOx
- 75 psi PRV (RHCH)
- 125 psi PRV (RHCV)
- Temperature and pressure gauge
- Indicator/status lights for: Power On; Call for Heat; Pre-Purge; Burner On; Ignition Failure
- Selector switch for internal or external (0-10VDC) control

Boiler Data

Model:

- ☐ Boiler RHCH
☐ Water Heater RHCV

Number of Units:

Fuel:

- ☐ Natural
☐ Propane

Heat Exchanger:

- ☐ Copper
☐ Cupro-Nickel

Water Trim:

- ☐ Glass-Lined Cast Iron

Control Pack Options

(CSD-1, FM, CA and IL codes come standard)

- ☐ **Control Pack A** - adds 4" alarm bell (instead of dry contacts) and normally open vent valve to the standard unit.
- ☐ **Control Pack B** - adds 4" alarm bell (instead of dry alarm contacts) and normally open vent valve, motorized safety valve with proof of closure and solenoid safety valves to the standard unit. Use for LDS.
- ☐ **Control Pack C** - is the same as the standard unit, but with low temp controls (200°F max). Use for KY code. (RHCH only)
- ☐ **Control Pack D** - is the same as control pack A, but with low temp controls (200°F max). (RHCH only)
- ☐ **Control Pack E** - is the same as control pack B, but with low temp.
- ☐ **Control Pack F** - is the same as the standard unit, but with a non-CSD-1 ignition control (3 tries for ignition).
- ☐ **Control Pack G** - is the same as control pack F, but with low temp. controls (200°F max). (RHCH only)
- ☐ **25% minimum firing rate** - order KM002501 with 1200 units, order KM002502 with 1600/2000/2400 units



Sizing Data*

	RHCH Boiler Size	Input, Hi-Fire BTU/h	Output, Hi-Fire BTU/h	Input, Lo-Fire BTU/h	Output, Lo-Fire BTU/h	Input, Hi-Fire kW	Output, Hi-Fire kW	Input, Lo-Fire kW	Output, Lo-Fire kW
	1200	1,200,000	1,032,000	600,000	518,500	352	302	176	151
	1600	1,600,000	1,376,000	800,000	688,000	469	403	234	202
	2000	1,999,000	1,719,000	999,500	859,500	586	504	293	252
	2400	2,400,000	2,052,000	1,200,000	1,032,000	703	600	352	302
	RHCV Water Heater Size	Input, Hi-Fire BTU/h	Output, Hi-Fire BTU/h	Input, Lo-Fire BTU/h	Output, Lo-Fire BTU/h	Input, Hi-Fire kW	Output, Hi-Fire kW	Input, Lo-Fire kW	Output, Lo-Fire kW
	1200	1,200,000	1,032,000	600,000	518,500	352	302	176	151
	1600	1,600,000	1,376,000	800,000	688,000	469	403	234	202
	2000	1,999,000	1,719,000	999,500	859,500	586	504	293	252
	2400	2,400,000	2,052,000	1,200,000	1,032,000	703	600	352	302

Important Note: output shown is based on certification test standards. The efficiency of this unit will increase with lower return water temperature and/or lower modulation point, which will alter the output of the Rheos.

Size	Cat. IV Vent Size inches	Comb. Air Size inches	Shipping Weight lbs.	Cat. IV Vent Size cm	Comb. Air Size cm	Shipping Weight kg
1200	6	6	1220	15	15	554
1600	6	8	1265	15	20	574
2000	7	8	1295	18	20	588
2400	10	8	1350	25	20	613

Accessories

- Indoor side-wall vent terminal (required for horizontal, side-wall venting)
- Indoor side-wall combustion air terminal (required only for ducted combustion air)
- Vent terminal for outdoor unit (required for outdoor installations)
- Appliance Adapter (required for outdoor installations)
- Valve Heater Kit (required below 15°F - control packs B or E require 2)

Clearances

Appliance Surface	Clearance From Combustible Material		Service Access Clearance	
Piping Side	1"	2.5 cm	24"	61 cm
Opposite Side	1"	2.5 cm	24"	61 cm
Top	1"	2.5 cm	24"	61 cm
Back	1"	2.5 cm	36"	91 cm
Front	1"	2.5 cm	36"	91 cm
Vent	Per UL1738 / ULC-S636 venting system supplier's instructions*			

Electrical Data

Model	Boiler / Heater			Blower
	Volts	Phase	Circuit	
RHCH, RHCV pump mounted 1200-2400	120	Single	20A	Included in Rheos connection

**Water Flow
Requirements**

Size	RHCH (Boiler)											
	TEMPERATURE RISE IN DEGREES											
	20°F		25°F		30°F		11°C		14°C		17°C	
	Flow gpm	H/L feet	Flow gpm	H/L feet	Flow gpm	H/L feet	Flow lpm	H/L m	Flow lpm	H/L m	Flow lpm	H/L m
1200	103	18	83	12	69	8.0	391	5.5	313	3.7	260	2.4
1600	138	22	113	14	92	9.7	521	6.7	417	4.3	347	3.0
2000	172	20	138	13	115	8.8	651	6.1	521	4.0	434	2.7
2400	206	18	165	12	138	8.0	781	5.5	625	3.7	521	2.4

NOTE: Maximum temperature rise is 30°F (17°C), as shown. Headloss is for boiler's heat exchanger only.

Size	RHCV (Water Heater)								
	HARD WATER			NORMAL WATER			SOFT WATER		
	Flow gpm	H/L feet	Temp Rise °F	Flow gpm	H/L feet	Temp Rise °F	Flow gpm	H/L feet	Temp Rise °F
1200	104	18	20	84	12	25	70	8.0	30
1600	164	29	17	133	20	21	90	8.9	31
2000	183	22	19	151	15	23	99	6.6	35
2400	209	18	20	167	12	25	139	8.0	30
	Flow lpm	H/L m	Temp Rise °C	Flow lpm	H/L m	Temp Rise °C	Flow lpm	H/L m	Temp Rise °C
1200	395	5.5	11	316	3.7	14	264	2.4	17
1600	620	8.8	9	502	6.1	12	340	2.7	17
2000	693	6.7	11	573	4.6	13	376	2.0	19
2400	791	5.5	11	632	3.7	14	527	2.4	17

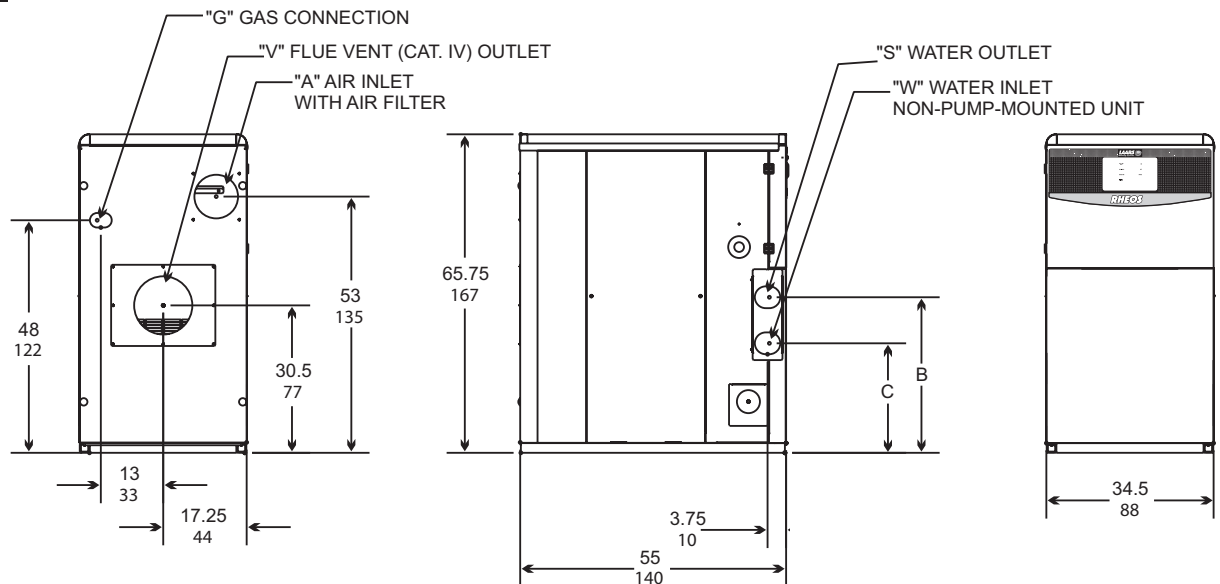
NOTE: Soft water: 1 to 7.5 grains per gallon. Normal water: 7.6 to 17 grains per gallon. Hard water: More than 17 grains per gallon.

**Recovery
Data**

Size	GPH Delivered								
	REQUIRED WATER TEMPERATURE RISE								
	40°F GPH	50°F GPH	60°F GPH	70°F GPH	80°F GPH	90°F GPH	100°F GPH	120°F GPH	140°F GPH
1200	3061	2449	2041	1749	1531	1361	1224	1020	875
1600	4082	3265	2721	2332	2041	1814	1633	1361	1166
2000	5102	4082	3401	2915	2551	2268	2041	1701	1458
2400	6122	4898	4082	3499	3061	2721	2449	2041	1749

Size	L/h Delivered								
	REQUIRED WATER TEMPERATURE RISE								
	22°C L/h	28°C L/h	33°C L/h	39°C L/h	44°C L/h	50°C L/h	56°C L/h	67°C L/h	78°C L/h
1200	11,571	9257	7714	6612	5786	5143	4629	3857	3306
1600	15,429	12,343	10,286	8816	7714	6857	6171	5143	4408
2000	19,286	15,429	12,857	11,020	9643	8571	7714	6429	5510
2400	23,143	18,514	15,429	13,224	11,571	10,286	9257	7714	6612

Dimensional Data



Size	"V" Vent Outlet Connection		"A" Air Inlet Connection		"W" Inlet Water Connection Non Pump- Mounted	"S" Outlet Water Connection All Models
	in	cm	in	cm	NPT	NPT
1200	6	15	6	15	2-1/2"	2-1/2"
1600	6	15	8	20	2-1/2"	2-1/2"
2000	7	18	8	20	3"	3"
2400	10	25	8	20	3"	3"

Size	"G" Gas Connects Std/Control Pk A Nat/LP	Control Pk B & E		"B"		"C"	
		Nat	LP	in	cm	in	cm
1200	1"	1-1/2"	1-1/2"	34-1/4	87	27-3/4	70
1600	1-1/2"	2"	2"	34-1/4	87	25-1/2	65
2000	1-1/2"	2"	1"	34-1/4	87	24-3/4	63
2400	1-1/2"	2"	2"	32	81	22-1/2	57