

# **LAARS-STOR™ SERIES®**

Indirect Water Heaters



**LAARS®**   
**Heating Systems Company**  
A subsidiary of **BRADFORD WHITE®** Corporation

# **LAARS-STOR™ SERIES®**

## **Indirect Water Heaters**

Laars® Heating Systems offers high volume single-wall and double-wall indirect water heaters. All model types feature a super-efficient heat exchanger – a carbon steel, glass-lined coil for the Laars-Stor™ Single Wall and a stainless steel coil for the Laars-Stor™ SS. The Laars-Stor2™ was recently introduced to the series and features a new double-wall heat exchanger. The new design is super-efficient and is the perfect mate for your boiler, heat pump or solar heating system.

Laars Heating Systems' single-wall and double-wall indirect models are dependable and durable water heaters that supply an unprecedented volume of hot water. They are built to last, problem-free, efficient and offer high deliverability for years. That's why all residential Laars-Stor™ and Laars-Stor2™ Series® indirect water heaters offer a Limited Lifetime Tank and Heat Exchanger Warranty.

When homes already have an existing boiler system, Laars single-wall and double-wall indirect water heaters are the perfect complement.



# IMPORTANT REASONS TO CONSIDER A **LAARS-STOR™ SERIES® INDIRECT WATER HEATER**

## **SAVE MONEY AND ENERGY**

Indirect water heaters use the home's boiler or furnace as the heat source. They are usually the least expensive way to provide hot water.

## **HIGH PERFORMANCE**

Laars-Stor™ models feature a super efficient heat exchanger made of a glass-lined carbon steel tubing giving an exceptional first hour delivery and high volumes of hot water.

## **LOW PRESSURE DROP**

Laars-Stor™ Series indirect water heaters were designed to minimize pressure drop so that customers get the hot water they want at the pressure they have come to expect.

## **EFFICIENCY**

Since hot water is stored in the water heaters insulated storage tank, the boiler or furnace does not have to turn on and off as frequently, improving its fuel economy.

## **INSTALLATION EASE**

These water heaters require no fuel or venting materials. They connect directly to an existing boiler.

## **LIMITED LIFETIME WARRANTY**

Laars-Stor™ models were designed and built for problem free and reliable service. We offer this warranty because of our confidence in the dependability and durability of the product.

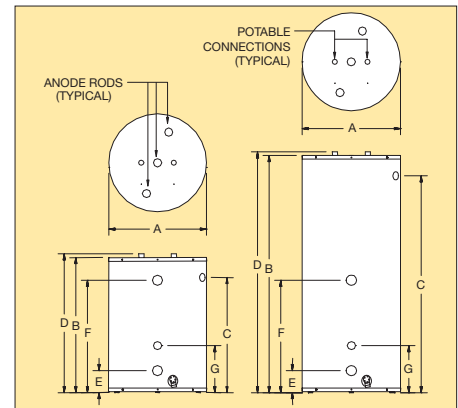


# LAARS-STOR™ RESIDENTIAL ENERGY SAVER SINGLE-WALL INDIRECT WATER HEATER

The ingenious Laars-Stor™ single wall was engineered to provide the lowest pressure drop, the highest hot water output and the highest amount of effective actual heat transfer area of any indirect fired water heater in the industry.



- **Heat Exchanger**—Single wall 1½" glass coated steel.
- **Factory Installed Sediment Reduction System**—Cold water inlet sediment reducing device. Helps prevent sediment build-up in tank. Increases first hour delivery of hot water while minimizing temperature build-up at top of tank.
- **Three Protective Anode Rods**—Provides added protection against corrosion for long trouble-free service.
- **Glass Lined Tank**—Laars Heating Systems water heater tanks are protected from the corrosive effects of hot water by an exclusive ceramic porcelain-like coating.
- **Fully Automatic Controls**—Immersed Honeywell aquastat.
- **Factory Installed Nipples**—For longer water heater life, easier installation.
- **2" Non-CFC Foam Insulation**—Covers the sides and top of tank to save energy by retarding loss of heat.
- **Supply and Return Connections**—The 1" NPT female connections are located on the front for both the boiler supply and boiler return.
- **Stand-by Heat Loss**—Less than ½°F per hour.
- **Brass Drain Valve.**
- **T&P Relief Valve Included**—All models feature opening on side of tank.
- **Limited Lifetime Warranty on Steel Tank and Heat Exchanger**—Heavy gauge steel automatically formed, rolled and welded to assure a continuous seam for glass lining.
- **Six Year Limited Warranty on Parts.**



## Residential Laars-Stor™

Model Number	Capacity			A		B		C		D		E		F		G		Shipping Weight	
	Imp. Gal.	U.S. Gal.	Liters	Jacket Diameter in.	cm.	Height Floor to Heater Top in.	cm.	Height Floor to T&P Conn. in.	cm.	Height Floor to Water Conn. in.	cm.	Height Floor to Exchanger Outlet in.	cm.	Height Floor to Exchanger Inlet in.	cm.	Height Floor to Aquastat in.	cm.	Approx. lbs.	kg.
LS-SW-2-30-L	25	30	114	22	56	33 5/8	85	28 1/4	72	34 3/8	87	5 3/8	14	27 1/2	70	11 1/2	30	140	64
LS-SW-2-40-L	32	38	143	22	56	41 1/8	104	34 3/8	87	41 7/8	106	5 3/8	14	27 1/2	70	11 1/2	30	172	77
LS-SW-2-50-L	40	48	182	22	56	46 1/4	112	40 1/8	102	47	119	5 3/8	14	27 1/2	70	11 1/2	30	180	82
LS-SW-2-65-L	50	60	227	22	56	59 1/4	150	53 1/8	135	60	152	5 3/8	14	27 1/2	70	11 1/2	30	196	89
LS-SW-2-80-L	62	75	284	24	61	59	150	52 7/8	135	59 3/4	152	5 3/8	14	27 1/2	70	11 1/2	30	224	102
LS-SW-2-120-L	97	116	439	28 1/4	72	62 1/2	159	55 3/4	142	63 1/4	161	6 3/8	16	28 1/2	72	11 1/2	30	355	161

Meets or exceeds the insulating standards established under ASHRAE Standard 90.1b (current edition).

**General:** All units are certified at 300 PSI (2068 kPa) test pressure and 150 PSI working pressure (1034 kPa). All potable water connections are ¾" (19mm) NPT on 8" (203mm) centers.

*Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.*

	LS-SW-2-30-L	LS-SW-2-40-L	LS-SW-2-50-L	LS-SW-2-65-L	LS-SW-2-80-L	LS-SW-2-120-L
<b>1st Hr. US Gals. Rating @ 140°F</b>	279	288	297	306	321	357
<b>1st Hr. Liters Rating @ 60°C</b>	1056	1090	1124	1158	1215	1351
<b>1st Hr. US Gals. Rating @ 115°F</b>	429	438	447	456	470	507
<b>1st Hr. Liters Rating @ 46°C</b>	1624	1658	1692	1726	1779	1919

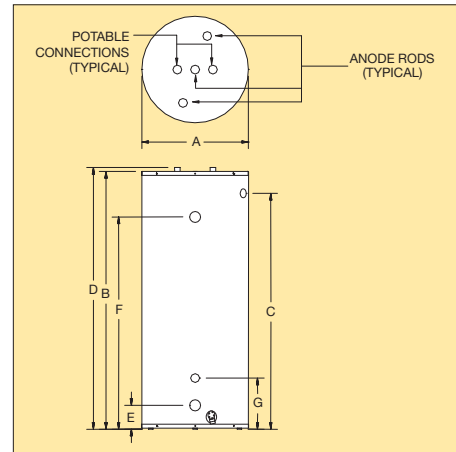
**Note:** All ratings are based on 200°F boiler water temperature, 50°F potable water inlet temperature and an approximate boiler output of 220,000 BTU/H

# LAARS-STOR™ COMMERCIAL ENERGY SAVER SINGLE-WALL INDIRECT WATER HEATER

Laars-Stor™ single wall commercial models incorporate a super-efficient heat exchanger. Made of 1.5" diameter carbon steel tubing and coated with a glass-lining, it has a total heat surface area of 27.2 square feet. The result is an exceptional first hour delivery and vast hot water reserves.



- **Heat Exchanger**—Single wall 1½" glass coated steel.
- **Factory Installed Sediment Reduction System**—Cold water inlet sediment reducing device. Helps prevent sediment build-up in tank. Increases first hour delivery of hot water while minimizing temperature build-up at top of tank.
- **Three Protective Anode Rods**—Provides added protection against corrosion for long trouble-free service.
- **Glass Lined Tank**—Laars Heating Systems water heater tanks are protected from the corrosive effects of hot water by an exclusive ceramic porcelain-like coating.
- **Fully Automatic Controls**—Immersed Honeywell aquastat.
- **Factory Installed Nipples**—For longer water heater life, easier installation.
- **2" Non-CFC foam insulation**—Covers the sides and top of tank to save energy by retarding loss of heat.
- **Supply and Return Connections**—The 1" NPT female connections are located on the front for both the boiler supply and boiler return.
- **Stand-by Heat Loss**—Less than ½°F per hour.
- **Brass Drain Valve.**
- **T&P Relief Valve Installed**—All models feature opening on side of tank.
- **Five Year Limited Warranty on Steel Tank and Heat Exchanger**—Heavy gauge steel automatically formed, rolled and welded to assure a continuous seam for glass lining.
- **One Year Limited Warranty on Parts.**



## Commercial Laars-Stor™

Model Number	Capacity			A		B		C		D		E		F		H		Shipping Weight	
	Imp. Gal.	U.S. Gal.	Liters	Jacket Diameter in.	cm.	Height Floor to Heater Top in.	cm.	Height Floor to T&P Conn. in.	cm.	Height Floor to Water Conn. in.	cm.	Height Floor to Exchanger Outlet in.	cm.	Height Floor to Exchanger Inlet in.	cm.	Height Floor to Aquastat in.	cm.	Approx. lbs.	kg.
LS-SW-65C-5	48	58	220	22	56	59 1/4	150	53 1/8	135	60	152	5 3/8	14	47 3/4	121	11 1/2	29	265	120
LS-SW-80C-5	61	73	276	24	61	59	150	52 7/8	134	59	152	5 3/8	14	47 3/4	121	11 1/2	29	293	133
LS-SW-120C-5	95	114	431	28 1/4	72	62 1/2	159	55 3/4	142	60	161	6 3/8	16	48 3/4	124	11 1/2	29	415	188

Meets or exceeds the insulating standards established under ASHRAE Standard 90.1b (current edition).

**General:** All units are certified at 300 PSI (2068 kPa) test pressure and 150 PSI working pressure (1034 kPa). All potable water connections are ¾" (19mm) NPT on 8" (203mm) centers.

*Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.*

	LS-SW-65C-5	LS-SW-80C-5	LS-SW-120C-5
<b>1st Hr. US Gals. Rating @ 140°F</b>	534	546	583
<b>1st Hr. Liters Rating @ 60°C</b>	2021	2067	2207
<b>1st Hr. US Gals. Rating @ 115°F</b>	820	834	871
<b>1st Hr. Liters Rating @ 46°C</b>	3104	3157	3297

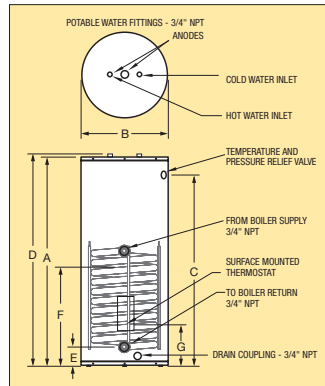
**Note:** All ratings are based on 200°F boiler water temperature, 50°F potable water inlet temperature and an approximate boiler output of 420,000 BTU/H

# LAARS-STOR2™ RESIDENTIAL ENERGY SAVER DOUBLE-WALL INDIRECT WATER HEATER

The Laars-Stor2™ features a patented double-wall carbon steel heat exchanger coil coated with a glass-lining for corrosion resistance and long life. The Laars-Stor2™ supplies a first hour rating of 120 to 158 gallons per hour.



- **Heat Exchanger**—Double wall 1½" O.D. glass coated steel coil. Because the double wall coil has a positive leak path, the hydronic fluid will stay separate from the potable water.
- **Low Heat Exchanger Head Loss**—Up to 10 GPM flow, with less than 5 ft. of head loss. Greatly reduces the required pump size for heat exchange.
- **Factory Installed Sediment Reduction System**—Cold water inlet sediment reducing device. Helps prevent sediment build-up in tank. Increases first hour delivery of hot water while minimizing temperature build-up at top of tank.
- **Glass Lined Tank**—Laars Heating Systems water heater tanks are protected from the corrosive effects of hot water by an exclusive ceramic porcelain-like coating.
- **Fully Automatic Controls**—Fast acting surface-mount thermostat for automatic temperature control.
- **Water Connections**—¾" NPT factory installed true dielectric fittings. Extends water heater life and eases installation.
- **2" Non-CFC Foam Insulation**—Covers the sides and top of tank to save energy by retarding loss of heat. Also increases jacket rigidity.
- **Two Protective Aluminum Rods**—Provides added protection against corrosion for long trouble-free service.
- **Supply and Return Connections**—The ¾" NPT female connections are located on the front for both the boiler supply and boiler return.
- **Stand-by Heat Loss**—Less than ½°F per hour (ASHRAE 90.1b current standard).
- **Brass Drain Valve.**
- **T&P Relief Valve Included**—All models feature opening on side of tank.
- **Steel Tank**—Heavy gauge steel automatically formed, rolled and welded to assure a continuous seam for glass lining.
- **I-B-R Certified.**



## Residential Laars-Stor2™

Model Number	Capacity			A		B		C		D		E		F		G		Shipping Weight	
	Imp. Gal.	U. S. Gal.	Liters	Floor to Heater Top in.	Heater Top cm.	Jacket Diameter in.	Jacket Diameter cm.	Floor to T&P Conn. in.	Floor to T&P Conn. cm.	Floor to Water Conn. in.	Floor to Water Conn. cm.	Floor to Boiler Outlet in.	Floor to Boiler Outlet cm.	Floor to Boiler Inlet in.	Floor to Boiler Inlet cm.	Floor to Thermostat in.	Floor to Thermostat cm.	Approx. lbs.	Approx. kg.
LS-DW-2-40-L	32	38	144	41	104	22	56	34 <sup>3</sup> / <sub>8</sub>	87	41 <sup>7</sup> / <sub>8</sub>	108	5 <sup>3</sup> / <sub>8</sub>	14	27 <sup>1</sup> / <sub>2</sub>	70	11 <sup>1</sup> / <sub>2</sub>	29	170	76
LS-DW-2-50-L	40	48	182	46 <sup>1</sup> / <sub>4</sub>	117	22	56	40 <sup>1</sup> / <sub>8</sub>	102	47 <sup>1</sup> / <sub>4</sub>	120	5 <sup>3</sup> / <sub>8</sub>	14	27 <sup>1</sup> / <sub>2</sub>	70	11 <sup>1</sup> / <sub>2</sub>	29	180	89
LS-DW-2-65-L	54	64	242	59	150	22	56	53 <sup>1</sup> / <sub>8</sub>	135	60	153	5 <sup>3</sup> / <sub>8</sub>	14	27 <sup>1</sup> / <sub>2</sub>	70	11 <sup>1</sup> / <sub>2</sub>	29	196	89
LS-DW-2-80-L	63	75	284	59	150	24	61	52 <sup>7</sup> / <sub>8</sub>	134	59 <sup>3</sup> / <sub>4</sub>	152	5 <sup>3</sup> / <sub>8</sub>	14	27 <sup>1</sup> / <sub>2</sub>	70	11 <sup>1</sup> / <sub>2</sub>	29	224	102

I-B-R Water Heater Ratings						DOE Water Heater Performance				Heat Exchanger Head Loss					
Model	First Hour Rating @ 135°F (Gal./Hr.)	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Minimum Heat Req. Rate (BTU/Hr.)	Minimum Heat Source Flow Rate (Gal./Min.)	Model	Maximum First Hour Rating (Gal./Hr.) @ 140°F	Continuous Draw Rating (Gal./Min.) @ 115°F	Approximate Boiler Output Needed For Ratings (BTU/Hr.)	GPM	Ft. of Hd. Loss				
										2	5	8	10	12	
LS-DW-2-40-L	123	98	1.1	65,000	8.0	LS-DW-2-40-L	80	122	0.9 1.6	55,000	trace	0.4	2.3	4.6	6.9
LS-DW-2-50-L	133	98	0.9	65,000	8.0	LS-DW-2-50-L	87	129	0.9 1.6	55,000					
LS-DW-2-65-L	148	98	0.7	65,000	8.0	LS-DW-2-65-L	96	138	0.9 1.6	55,000					
LS-DW-2-80-L	158	98	0.6	65,000	8.0	LS-DW-2-80-L	106	148	0.9 1.6	55,000					

**Notes:** These certified ratings were obtained with a heat source output rate and flow rate as specified and a 180°F boiler water supply temperature. Other results will be obtained under different conditions.

**Notes:** Based on 200°F boiler water temperature and 50°F potable water inlet temperature.

Meets or exceeds the insulating standards established under ASHRAE Standard 90.1b (current edition).

### Meets NAECA Requirements

**General:** All units are certified at 300 PSI test pressure (2068 kPa) and 150 PSI working pressure (1034 kPa). All potable water and heat exchanger connections are ¾" NPT (19mm) on 8" (203mm) centers.

*Dimensions and specifications subject to change without notice in accordance with our policy of continuous product improvement.*

### Suitable for Water (Potable) Heating and Space Heating

Toxic chemicals, such as those used for boiler treatment, shall NEVER be introduced into the potable water side. The potable side of this unit may NEVER be connected to any existing heating system or component(s) previously used with a non-potable water heating appliance. The heat exchanger side of the unit may be used in space heating applications.

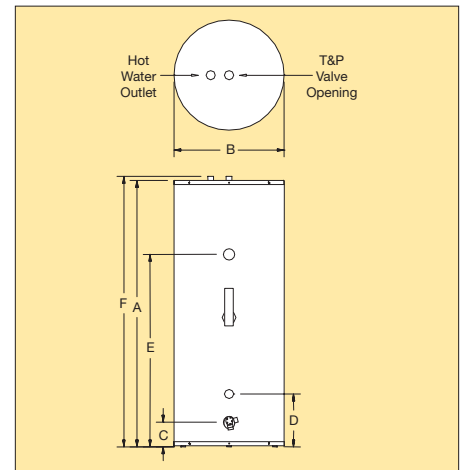


# LAARS-STOR™ SS ENERGY SAVER STAINLESS STEEL INDIRECT WATER HEATER

The Laars-Stor™ SS utilizes a superior grade of stainless steel for the tank and the heat transfer coil. This construction is lightweight and also resists pitting while minimizing inter-granular and stress corrosion. The Laars-Stor™ SS models provide superior thermal conductivity for higher efficiency.



- **Stainless Steel Tank and Heat Exchanger**—Made from chromium molybdenum - titanium ferritic 444 stainless steel alloy.
- **Supply and Return Connections**—The ¾" NPT female connections are located on the front for both the boiler supply and boiler return (1" NPT on LS-RTV-119).
- **CFC Free Polystyrene Insulation**—Form fitted and molded, this system contributes to greater heat retention, improved overall efficiency and reduced standby heat loss.
- **Jacket**—Corrosion and dent resistant plastic casing.
- **Stand-by Heat Loss**—Less than ½°F per hour.
- **Brass Drain/Return Valve.**
- **T&P Relief Valve Opening**—All models have special tapping on top of tank.
- **Warranty**—Residential models have a limited lifetime warranty on the tank and heat exchanger. The LS-RTV-119 is a commercial model and is furnished with a 5 year warranty on the tank and heat exchanger. For more details please refer to the complete copy of the warranty included with the heater.
- **Six Year Limited Warranty on Parts.**



## Laars-Stor™ SS

Model Number	Capacity		A		B		C		D		E		F		Return		Supply		Shipping Weight	
	Imp. Gal.	U.S. Gal.	Height in.	Height cm.	Diameter in.	Diameter cm.	Cold Supply in.	Cold Supply cm.	Boiler Return in.	Boiler Return cm.	Boiler Supply in.	Boiler Supply cm.	Height to Hot Water Outlet in.	Height to Hot Water Outlet cm.	in.	cm.	in.	cm.	lbs.	kg.
LS-RTV-40-L	—	39.6	38	96	23 <sup>3</sup> / <sub>4</sub>	60	7 <sup>1</sup> / <sub>4</sub>	18	11 <sup>1</sup> / <sub>2</sub>	29	27 <sup>1</sup> / <sub>4</sub>	69	38 <sup>1</sup> / <sub>2</sub>	10	—	—	—	—	83	38
LS-RTV-52-L	—	51.3	47 <sup>3</sup> / <sub>4</sub>	121	23 <sup>3</sup> / <sub>4</sub>	60	7 <sup>1</sup> / <sub>4</sub>	18	11 <sup>1</sup> / <sub>2</sub>	29	27 <sup>3</sup> / <sub>4</sub>	70	48 <sup>1</sup> / <sub>4</sub>	123	—	—	—	—	93	42
LS-RTV-75-L	—	74.5	65 <sup>1</sup> / <sub>2</sub>	166	23 <sup>3</sup> / <sub>4</sub>	60	7 <sup>1</sup> / <sub>4</sub>	18	11 <sup>1</sup> / <sub>2</sub>	29	28	71	66	168	—	—	—	—	117	53
LS-RTV-75D-L	—	74.5	65 <sup>1</sup> / <sub>2</sub>	166	23 <sup>3</sup> / <sub>4</sub>	60	7 <sup>1</sup> / <sub>4</sub>	18	11 <sup>1</sup> / <sub>2</sub>	29	27 <sup>1</sup> / <sub>2</sub>	70	66	168	38	96	54	137	130	59
LS-RTV-119-L	—	118.9	62	157	23 <sup>3</sup> / <sub>4</sub>	79	10 <sup>1</sup> / <sub>4</sub>	26	16 <sup>3</sup> / <sub>4</sub>	42	44 <sup>3</sup> / <sub>8</sub>	113	62 <sup>1</sup> / <sub>2</sub>	159	—	—	—	—	315	142

Model Number	Capacity		Performance				@180°F Supply		@200°F Supply	
	U.S. Gal.	Liters	Heat Surface Area (ft²)	Boiler Flow U.S. GPM	Gross Boiler Output BTU/Hr	Pressure Drop (Ft. W. C.)	First Hour @ 140°F	GPH Rec. @ 90°F Rise	First Hour @ 140°F	GPH Rec. @ 90°F Rise
LS-RTV-40-L	1.17	4.43	7.64	11	136,000	5.3	151	111	182	141
LS-RTV-52-L	1.56	5.91	10.01	11	173,000	8.7	192	141	231	180
LS-RTV-75-L	1.56	5.91	10.01	11	190,000	8.7	216	136	253	173
LS-RTV-75D-L	2.34	8.86	15.28	22	265,000	10.6	295	215	355	275
LS-RTV-119-L	4.60	17.4	21.31	15	252,000	3.1	298	178	337	217

- Notes:**
- 1) Inlet water temperature based on 50°F.
  - 2) LS-RTV-75D-L has 2 coils.
  - 3) LS-RTV-119 supplied with 3 extra plugged tappings (see manual).
  - 4) LS-RTV-119 equipped with steel casing.
  - 5) ¾" supply/return piping is recommended on heat source side.

Meets or exceeds the insulating standards established under ASHRAE Standard 90.1b (current edition).

**General:** All units are certified at 300 PSI (2068 kPa) test pressure and 150 PSI working pressure (1034 kPa). All potable water connections are ¾" (19mm) NPT (1¼" (32mm) NPT on LS-RTV-119).

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View our entire product line at [www.Laars.com](http://www.Laars.com)

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