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™ 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.

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

SAVE MONEY AND ENERGY
Indirect water heaters use the home's boiler, heat pump or solar heating system as the heat source. They are usually the least expensive way to provide hot water.

HIGH PERFORMANCE
Laars-Stor™ models feature an extremely 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, heat pump or solar heating system does not have to turn on and off as frequently, improving its fuel economy.

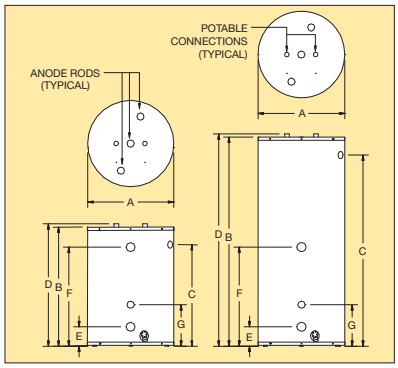
INSTALLATION EASE
These water heaters require no fuel or venting materials. They connect directly to an existing boiler.

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 Imp. Gal.	U.S. Gal.	Liters	A Jacket Diameter in.	A cm.	B Height Floor to Heater Top in.	B cm.	C Height Floor to T&P Conn. in.	C cm.	D Height Floor to Water Conn. in.	D cm.	E Height Floor to Exchanger Outlet in.	E cm.	F Height Floor to Exchanger Inlet in.	F cm.	G Height Floor to Aquastat in.	G cm.	Shipping Weight 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	164	74
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	185	85
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	195	89
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	225	102
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	250	114
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	370	167

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.

AHRI Certified Water Heater Ratings

Model Number	First Hour Delivery @ 135°F (Gal.)	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Minimum Output Rate of Heat Source (BTU/Hr.)	Minimum Heat Source Flow Rate (Gal./Min.)
SW-2-30-L	255	235	1.2	157,000	13.7
SW-2-40R-L	260	235	1.1	157,000	13.7
SW-2-50R-L	265	235	0.9	157,000	13.7
SW-2-65-L	275	235	0.7	157,000	13.7
SW-2-80-L	295	235	0.6	157,000	13.7
SW-2-120-L	325	235	0.4	157,000	13.7

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.

DOE Water Heater Performance

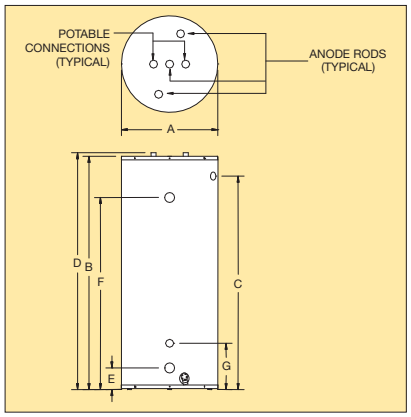
Model Number	Maximum First Hour Rating (Gal.) @ 140°F	115°F	Continuous Draw Rating (Gal./Min.) @ 140°F	115°F	Approximate Boiler Output Needed for Ratings (BTU/Hr.)
SW-2-30-L	279	429	4.2	6.7	220,000
SW-2-40R-L	288	438	4.2	6.7	220,000
SW-2-50R-L	297	447	4.2	6.7	220,000
SW-2-65-L	306	456	4.2	6.7	220,000
SW-2-80-L	321	470	4.2	6.7	220,000
SW-2-120-L	357	507	4.2	6.7	220,000

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

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	Capacity			A	B	C	D	E	F	H	Shipping Weight	
Number	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	59¼ 150	53⅛ 135	60 152	5⅜ 14	47¾ 121	11½ 29	265	120
LS-SW-80C-5	61	73	276	24 61	59 150	52⅞ 134	59 152	5⅜ 14	47¾ 121	11½ 29	293	133
LS-SW-120C-5	95	114	431	28¼ 72	62½ 159	55¾ 142	60 161	6⅜ 16	48¾ 124	11½ 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.

AHRI Certified Water Heater Ratings

Model Number	First Hour Delivery @ 135°F (Gal.)	Continuous Draw Rating @ 135°F (Gal./Hr.)	Standby Heat Loss Rating (°F/Hr.)	Minimum Output Rate of Heat Source (BTU/Hr.)	Minimum Heat Source Flow Rate (Gal./Min.)
SW-65C-5	405	370	0.7	245,000	14.0
SW-80C-5	415	370	0.6	245,000	14.0
SW-120C-5	445	370	0.4	245,000	14.0

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.

DOE Water Heater Performance

Model Number	Maximum First Hour Rating (Gal.) @ 140°F	115°F	Continuous Draw Rating (Gal./Min.) @ 140°F	115°F	Approximate Boiler Output Needed for Rating (BTU/Hr.)
SW-65C-5	534	820	8.0	12.8	420,000
SW-80C-5	546	834	8.0	12.8	420,000
SW-120C-5	583	871	8.0	12.8	420,000

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

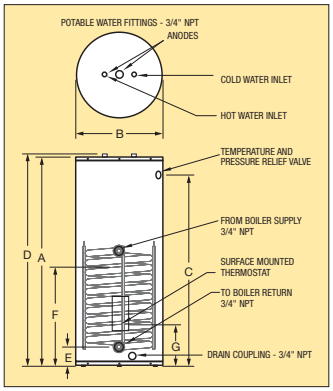
Heat Exchanger Head Loss

GPM	5	8	10	12	14
Ft. of Hd. Loss	0.64	1.63	2.55	3.67	5.00

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.

Residential Laars-Stor2™

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

AHRI Water Heater Ratings					
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.)
LS-DW-2-40-L	123	98	1.1	65,000	8.0
LS-DW-2-50-L	133	98	0.9	65,000	8.0
LS-DW-2-65-L	148	98	0.7	65,000	8.0
LS-DW-2-80-L	158	98	0.6	65,000	8.0

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.

DOE Water Heater Performance					
Model	Maximum First Hour Rating (Gal/Hr.) @ 140°F	115°F	Continuous Draw Rating (Gal/Min.) @ 140°F	115°F	Approximate Boiler Output Needed For Ratings (BTU/Hr.)
LS-DW-2-40-L	80	122	0.9	1.6	55,000
LS-DW-2-50-L	87	129	0.9	1.6	55,000
LS-DW-2-65-L	96	138	0.9	1.6	55,000
LS-DW-2-80-L	106	148	0.9	1.6	55,000

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

Heat Exchanger Head Loss					
GPM	2	5	8	10	12
Ft. of Hd. Loss	trace	0.4	2.3	4.6	6.9

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

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.

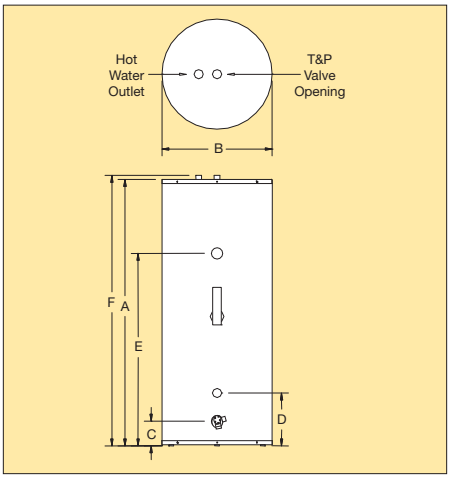
Suitable for Water (Potable) Heating and Space Heating

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	Capacity		A	B	C	D	E	F	Return	Supply	Shipping Weight
Number	Imp. Gal.	U.S. Gal.	Height in. cm.	Diameter in. cm.	Cold Supply in. cm.	Boiler Return in. cm.	Boiler Supply in. cm.	Height to Hot Water Outlet in. cm.	in. cm.	in. cm.	Approx. lbs. kg.
LS-RTV-40-L	—	39.6	38 96	23¾ 60	7¼ 18	11½ 29	27¼ 69	38½ 10	— —	— —	83 38
LS-RTV-52-L	—	51.3	47¾ 121	23¾ 60	7¼ 18	11½ 29	27¾ 70	48¼ 123	— —	— —	93 42
LS-RTV-75-L	—	74.5	65½ 166	23¾ 60	7¼ 18	11½ 29	28 71	66 168	— —	— —	117 53
LS-RTV-119-L	—	118.9	62 157	23¾ 79	10¼ 26	16¾ 42	44⅜ 113	62½ 159	— —	— —	315 142

Model	Capacity		Performance				First Hour Delivery Rating Gal./Hr.	Continuous Draw @135°F Gal./Hr.	Standby Heat Loss Rating °F/Hr.	Minimum Heat Required Rate BTU/Hr.	Minimum Heat Source Flow Rate Gal./Min.
Number	U.S. Gal.	Liters	Heat Surface Area (ft²)	Boiler Flow U.S. GPM	Gross Boiler Output BTU/Hr	Pressure Drop (Ft. W. C.)					
LS-RTV-40-L	1.17	4.43	7.64	11	136,000	5.3	158	133	0.9	88,000	8.0
LS-RTV-52-L	1.56	5.91	10.01	11	173,000	8.7	200	165	0.7	113,000	8.0
LS-RTV-75-L	1.56	5.91	10.01	11	190,000	8.7	225	165	0.5	113,000	8.0
LS-RTV-119-L	4.60	17.4	21.31	15	252,000	3.1	360	280	0.6	195,000	11.0

NOTE: These certified ratings were obtained with a heat source output and flow rate as specified and a 180°F boiler water supply temperature.

Notes: 1) Inlet water temperature based on 50°F.
2) LS-RTV-119 supplied with 3 extra plugged tappings (see manual).
3) LS-RTV-119 equipped with steel casing.
4) 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

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