AUGUST 1, 2007

CONSUMERS' DIRECTORY OF CERTIFIED EFFICIENCY RATINGS

for

Heating and Water Heating Equipment

INCLUDES:

RESIDENTIAL HEATING EQUIPMENT

- Gas Central Furnaces
- Oil Central Furnaces
- Gas Boilers
- Oil Boilers
- Gas Room Heaters
- Gas Floor Furnaces
- Gas Wall Furnaces

COMMERCIAL HEATING EQUIPMENT

- Gas Central Furnaces
- Oil Central Furnaces

RESIDENTIAL WATER HEATING EQUIPMENT

- Gas Water Heaters
- Oil Water Heaters
- Electric Water Heaters
  including Heat Pump Type

COMMERCIAL WATER HEATING EQUIPMENT

- Gas Water Heaters
- Oil Water Heaters
- Electric Water Heaters

EFFICIENCY RATING CERTIFIED ama

An Association of Appliance and Equipment Manufacturers

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"Chapter I and Chapter III (Sections 1 - 3) of this directory have been approved by the California Energy Commission (CEC) for determining compliance with its energy efficiency standards for buildings. (See Section 100 (g), title 24, California Code of Regulations). For information about models for sale in California that are beyond the scope of the GAMA program or are produced by manufacturers that have chosen not to participate in the GAMA program, please call the CEC Hotline at (916) 654-5106 or (toll free in California) at (800) 772-3300."

AUGUST 1, 2007
CONSUMERS DIRECTORY OF CERTIFIED EFFICIENCY RATINGS FOR RESIDENTIAL HEATING AND WATER HEATING EQUIPMENT AND COMMERCIAL WATER HEATING EQUIPMENT

PROGRAM SPONSOR AND ADMINISTRATOR:

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FOREWORD

The Gas Appliance Manufacturers Association (GAMA) is a national trade association whose members manufacture over 90 percent of all the residential, commercial and industrial gas appliances made in the United States. GAMA also represents manufacturers of certain products that use oil or electricity as their energy source. There are a number of product divisions within GAMA. Four of those, the Furnace Division, Hydronics Institute Division, Direct Heating Division and Water Heater Division, have developed separate efficiency certification programs which verify manufacturers' equipment efficiency ratings in accordance with federally mandated test procedures.

The GAMA Furnace and Hydronics Institute Divisions sponsor the certification program for residential gas and oil central furnaces and boilers. The GAMA Direct Heating Division sponsors the efficiency certification program for vented gas room heaters, floor furnaces and wall furnaces. The GAMA Water Heater Division sponsors the efficiency certification program for residential gas, oil, electric (including heat pump type) water heaters, and commercial water heaters. Each of these programs operates independently of each other. This Directory lists the models for all participating manufacturers in each of the programs. The following is the format for those listings:

CHAPTER I Gas and Oil Central Heating Equipment

CHAPTER II Gas Vented Direct Heating Equipment

CHAPTER III Gas, Oil, Electric, Combination, & Instantaneous Water Heaters

CHAPTER IV Commercial Gas, Oil, Electric, & Instantaneous Water Heaters

CHAPTER V Commercial Gas and Oil Central Heating Equipment

Each participant in the GAMA Efficiency Certification Program is entitled to display the GAMA Certification Symbol (Seal), Figure 1, on units of models covered by the program. The seal may be affixed to the unit only at the time and place of manufacture. The seal may also be displayed on specification sheets, advertising and on other literature that either specifies ratings or claims participation in the program. The seal and listing in this Directory are an indication that the equipment's efficiency rating as well as output heating capacity for heating equipment and first hour rating for water heating equipment have been determined and are accurately stated in accordance with the applicable efficiency test method; no other warranty, representation, endorsement or other statement, expressed or implied, is made.

Figure 1. GAMA Certification Seal

EFFICIENCY
RATING
CERTIFIED
ama

CHAPTER III

GAS, OIL AND ELECTRIC WATER HEATERS, AND COMBINATION WATER HEATERS/SPACE HEATERS

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USE OF CHAPTER III AND DESCRIPTION OF GAMA WATER HEATER EFFICIENCY CERTIFICATION PROGRAM

Introduction

This chapter will assist the dealer in selling, and the consumer in selecting, the best water heating buy. The best buy is always a properly sized unit since with an undersized unit there will be times of insufficient hot water and oversized units are more costly to buy and operate. Once the proper size is determined, the best buy is almost always a more efficient unit which will usually cost more to purchase but less to operate.

How the Chapter is Set up

This Chapter is divided into sections based on the type of residential water heater: gas, oil, electric, heat pump with a storage tank, heat pump without a storage tank, and combination water heaters/space heaters. The columns of each listing (shown below*) provide the essential information needed to select an efficient and properly sized water heater.

*(with the exception of the combination listing)

Model Number (1)	Footnotes (2)	1st Hour Rating (3)	Energy Factor (4)

Column 1 — Model Number identifies each model. (The model number on a water heater can be found on the manufacturer's nameplate.)

Column 2 — Footnotes further identify the model or its intended use.

Column 3 — 1st Hour Rating is a measure of the water heater's ability to provide hot water.

Column 4 — Energy Factor is a measure of the overall efficiency rating of the water heater.

For gas and oil models, the last column lists recovery efficiency. The recovery efficiency only represents how efficiently energy is transferred to the water when the burner is firing. It should not be used in place of the Energy Factor to compare water heater efficiencies. Recovery efficiencies for electric models are not listed because they have a recovery efficiency of 98%.

How to Use This Chapter

The First Hour Rating and Energy Factor (EF) can be used to select the right size water heater for your needs and, at the same time, select an energy efficient model.

FIRST: Find the right size water heater for your needs by finding those models with a First Hour Rating that matches (within one or two gallons) your peak hour demand.

To estimate your peak hour demand:

1. Determine during what general time of day (morning, noon, evening) there is usually the most use of hot water in your home, keeping in mind the number of people in your home.

2. Using the following table, determine what your maximum usage of hot water in one hour could be; this is your peak hour demand:

NOTE: This table does not estimate total daily hot water usage. As an example, an average of 4 gallons of hot water is used each time dishes are washed by hand but, dishes washed by hand are usually done 3 times a day. The average daily hot water usage for hand dishwashing, 12 gallons, is about the same as the average hot water usage for an automatic dishwasher, used once a day.

Use	Average Gallons of Hot Water per Usage		Times Used During One Hour		Gallons Used in One Hour
Shower	20	x	_____	=	_____
Bath	20	x	_____	=	_____
Shaving	2	x	_____	=	_____
Hands and Face Washing	4	x	_____	=	_____
Hair Shampoo	4	x	_____	=	_____
Hand Dishwashing	4	x	_____	=	_____
Automatic Dishwasher	14	x	_____	=	_____
Food Preparation	5	x	_____	=	_____
Wringer Clothes Washer	26	x	_____	=	_____
Automatic Clothes Washer	32	x	_____	=	_____
			TOTAL (Peak Hour Demand)		_____

EXAMPLE: Your household uses the most hot water in the morning. In the busiest one hour period of the morning, the usage is

3 showers - 20 x 3 = 60
1 shave- 2 x 1 = 2
1 shampoo - 4 x 1 = 4
Handwashing
of Dishes - 4 x 1 = 4
(Peak Hour Demand) 70

In this case, the peak hour demand is 70 gallons and you should look in the third column of each listing for those models of water heaters with a first hour rating of 68 to 72 gallons.

NOTE: Models under each manufacturer's name are listed from the lowest to the highest first hour rating.

SECOND: Look at the EF listed in the fourth column for those models that have the first hour rating that you need. The higher the EF, the more energy efficient the water heater. The EF can be used to estimate a yearly cost of operation for a water heater. Tables 1 through 5 provide estimated yearly costs of operation for various fuel costs and various Energy Factors. Once you know the cost of fuel in your area, you can find the estimated annual cost of operation for any model using its EF and the appropriate table. (The cost of fuel in your area should be available from your fuel supplier.)

EXAMPLE:

Fuel Cost (Per Therm)	Energy Factor .54	.55	.56	.57	.58
1.08	$300	$294	$289	$284	$279
1.10	$305	$300	$294	$289	
1.12	$311	$305	$300		
1.14	$316	$311			
1.16	$322				

(Excerpt from Table 1. Estimated Annual Operating Cost for Gas Water Heater using Natural Gas)

At a fuel cost of $1.10/therm, a gas water heater with an EF of .55 has an estimated annual operating cost of $300.

If your choice of water heater is restricted to one fuel type (gas, oil or electric), you need only compare the EF values for that type. If you have a choice of more than one type of water heater, you should compare both the EF and the estimated cost of operation for the fuel rates in your area for each type of water heater that you can use. In all cases, keep in mind that the determination of the EF is based on a particular set of test conditions. Actual conditions of water heater use in a residence will differ from these test conditions. Consequently, the actual annual cost of operation will differ from the values on Tables 1 through 5.

THIRD: Determine the payback period. Doing this will help you decide what model water heater is most economical for you. Tables 1 through 5 illustrate that the higher the EF, the lower the annual operating cost. However, a more efficient water heater generally has a higher purchase price. Therefore, there is a period of time before the savings in the lower operating cost of a more efficient water heater make up for the increased price of that water heater as compared to a less efficient water heater, this is the payback period. It is only after the payback period that you obtain a net savings with the more efficient water heater.

Accordingly, the shorter the payback period, the better.

EXAMPLE: Assume you are intending to buy a gas water heater and your local gas cost is .60 per therm. You are comparing two water heaters, Model A and Model B, which both have the same first hour rating.

	Price of Water Heater	EF	Estimated Annual Cost of Operation
Model A	$165	.54	$166
Model B	$210	.58	$155
Additional Cost of More Efficient Model (Model B)			$210-165 = $45
Estimated Annual Savings in Operating cost for Model B			$166-155 = $11 (per year)
Payback Period			$45/$11 per year = 4.1 years

NOTE: As fuel prices increase, the greater the savings obtained from a more efficient water heater and the shorter the payback period becomes.

Information About the GAMA Water Heater Efficiency Certification Program

Chapter III is a product of the Water Heater Efficiency Certification Program sponsored by the Gas Appliance Manufacturers Association, Inc. (GAMA) in cooperation with its industry members. The GAMA Water Heater Efficiency Certification Program provides for independent verification of the water heater manufacturer's stated efficiency rating, represented by the Energy Factor (EF). The complete details of the GAMA Water Heater Efficiency Certification Program are contained in the Program Procedural Guide which is available from GAMA.

Testing Laboratories and Test Procedures

Intertek Testing Services of Cortland, New York, has been retained as the program administrator and independent testing laboratory responsible for conducting efficiency verification tests on water heaters. Randomly selected units of residential gas, electric and oil water heaters are tested in accordance with the U.S. Department of Energy (DOE) Test Procedure for Water Heaters as published in the May 11, 1998 Federal Register Notice, to verify the Energy Factor and First Hour Rating. Federal law requires that manufacturers' efficiency claims be based on Department of Energy test procedures; the Energy Factor is the descriptor that is determined by those test procedures. Copies of the water heater test procedure are available from GAMA.

In October 1990, DOE issued the following amended federal minimum efficiency requirements for residential water heaters which are based on the test procedures.

Type	Minimum Energy Factor
Gas-fired	0.67 – 0.0019V
Oil-fired	0.59 – 0.0019V
Electric	0.97 – 0.00132V
Tabletop	0.93 – 0.00132V
Instantaneous Gas-fired	0.62 – 0.0019V
Instantaneous Electric	0.93 – 0.00132V

Where “V” = Rated Volume

Use of Heat Traps

The listings in this Directory include water heater models factory equipped with heat traps on the inlet and outlet water connections. The efficiency (Energy Factor) of models not factory equipped with heat traps and having vertical water pipe connections can be increased by the addition of heat traps on the inlet and outlet water connections. To determine whether a specific model is factory equipped with heat traps, review the footnotes for that model.

Scope of the Program

The Program is open to all manufacturers of water heaters and to all firms that market private brand models. Participation in the Program is voluntary, but all models of residential water heaters marketed by a participant in the United States must be included in the Efficiency Certification Program. The residential water heaters covered by this program are defined by the following parameters:

Electric storage water heaters with energy input ratings of 12 kilowatts or less and with a storage capacity of not less than 20 gallons nor more than 120 gallons.

Heat pump water heaters with maximum current ratings of 24 amperes at a voltage no greater than 250 volts. The heat pump water heater may either include a storage tank or be intended for connection to an existing residential water heater or storage tank installation.

Gas storage water heaters with energy input ratings of 75,000 Btu's per hour or less and with a storage capacity of not less than 20 gallons nor more than 100 gallons.

Oil storage water heaters with energy input ratings of 105,000 Btu's per hour or less and with a storage capacity of 50 gallons or less.

Gas instantaneous water heaters with input ratings greater than 50,000 Btu's per hour but less than 200,000 Btu's per hour designed to deliver water at a controlled temperature of less than 180°F.

The Directory and the Federal Trade Commission EnergyGuide

The Federal Trade Commission (FTC) requires that gas, electric and oil residential, automatic storage water heaters be labeled to show 1) an estimated annual cost of operation for that particular model, based on a national average cost of fuel specified by FTC, and 2) how the efficiency of that model compares to all other comparable models. Currently, FTC does not require that heat pump water heaters or residential instantaneous water heaters be labeled.

The listing in this chapter is another means of providing the same information. The sample FTC "EnergyGuide" label on page 138 has explanations as to how the directory listing provides the same information as the FTC "EnergyGuide" label.

Model Number

The model number listed in the Directory identifies the essential model number designation of the water heater. All the numbers and letters of the listed model number will appear on the rating plate of units of that model, otherwise the units are not that model. As noted, other letters and numbers may also be on the rating plate, but they are not required to identify the basic model.

Please note that as the national average energy cost is changed by FTC, the estimated annual cost of operation will change even though the efficiency of the water heater has remained the same.

Based on standard U.S. Government tests

ENERGYGUIDE

The First Hour Rating is shown in the third column of the listing. →

Water Heater – Natural Gas
Capacity (first hour rating):
60 gallons

XYZ Corporation
Model(s) RP23,
RP38

← The model numbers for all models to which the label applies, are listed. The model number is given in the first column of the listing.

Compare the Energy Use of this Water Heater with Others Before You Buy.

This section shows how this model compares to all other similar models which have a First Hour Rating within the range noted. Chapter III allows for the comparison of the Energy Factor, and consequently, estimated annual energy consumption for each model within a narrower range of First Hour Ratings based on the consumer's particular hot water needs. ←

This is the estimated annual energy consumption for this model. This estimated annual energy consumption can be adequately approximated using the Energy Factor (EF) shown in the fourth column of the listing and employing the formula as described in the "Definitions and Calculations" section. →

This Model Uses
240 therms/year

Energy Use (therms/year) range of all similar models

Uses Least Energy	**Uses Most Energy**
245	295

Therms/year is a measure of energy use. Your utility company uses it to compute your bill. Only models with first hour ratings of **56** to **64** gallons are used in this scale. ← Range of First Hour Ratings.

Natural Gas water heaters that use fewer therms/year cost less to operate. This model's estimated yearly operating cost is:

$ 145

← This is the estimated annual operating cost for this model using the national average fuel cost noted.

National average unit cost of fuel. →

Based on a 1994 U.S. Government national average cost of $0.604 per therm for Natural Gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important Removal of this label before customer purchase is a violation of Federal law (42 USC 6302)

CORRELATION OF CHAPTER III LISTING
TO FTC "EnergyGuide" LABEL

Definitions and Sample Calculations

The measure of water heater efficiency listed is:

Energy Factor (EF) - A measure of the overall efficiency of a water heater determined by comparing the energy supplied in heated water to the total daily consumption of the water heater.

The measure used for the purpose of comparing models of similar hot water delivery capabilities is:

First Hour Rating (1st Hour Rating) - The amount of hot water that the water heater can supply in the first hour of operation. It is a combination of how much water is stored in the water heater and how quickly the water heater can heat cold water to the desired temperature.

The estimated yearly cost of operation for a water heater shown in Tables 1 through 5, is calculated by using one of the following formulas, as appropriate:

For gas and oil water heaters:

$$\frac{41045\ \text{Btu}}{\text{EF}} \times \begin{matrix}\text{Unit Cost}\\ \text{of Fuel}\end{matrix}\ \$/\text{Btu} \times 365 = \begin{matrix}\text{Estimated Annual}\\ \text{Cost of Operation}\end{matrix}$$

For electric water heaters, including heat pump units:

$$\frac{12.03\ \text{kWh}}{\text{EF}} \times \begin{matrix}\text{Unit Cost}\\ \text{of Fuel}\end{matrix}\ \$/\text{kWh} \times 365 = \begin{matrix}\text{Estimated Annual}\\ \text{Cost of Operation}\end{matrix}$$

EXAMPLES:

Using the national average unit costs of fuel, as determined by the U.S. Department of Energy, the following show how the estimated annual cost of operation is determined for each of the various fuels used for heating water:

Assume a gas water heater, using natural gas, has an EF of .57. Its estimated annual cost of operation is:

$$\frac{41045\ \text{Btu}}{.57} \times \$0.00000619/\text{Btu} \times 365 = \$163$$

If this same model of gas water heater uses LP gas, its estimated annual cost of operation is:

$$\frac{41045\ \text{Btu}}{.57} \times \$0.00001040/\text{Btu} \times 365 = \$273$$

Assume an oil water heater has an EF of .52. Its estimated annual cost of operation is:

$$\frac{41045\ \text{Btu}}{.52} \times \$0.00000685/\text{Btu} \times 365 = \$197$$

Assume an electric water heater has an EF of .88. Its estimated annual cost of operation is:

$$\frac{12.03\ \text{kWh}}{.88} \times \$0.0842/\text{kWh} \times 365 = \$420$$

Assume a heat pump water heater has an EF of 2.0. Its estimated annual cost of operation is:

$$\frac{12.03\ \text{kWh}}{2.0} \times \$0.0842/\text{kWh} \times 365 = \$185$$

The following unit conversions have been used in the sample calculations:

1 therm	=	100,000 Btu's
1 gallon LP Gas	=	91,333 Btu's
1 gallon Fuel Oil	=	138,700 Btu's
1 kWh	=	3,412 Btu's

Table 1: Estimated Annual Operating Costs for Natural Gas Water Heaters

Energy Factor

Fuel Cost per Therm	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68
$1.20	$409	$400	$391	$383	$375	$367	$360	$353	$346	$339	$333	$327	$321	$315	$310	$305	$300	$295	$290	$285	$281	$277	$272	$268	$264
$1.22	$415	$406	$397	$389	$381	$373	$366	$358	$351	$345	$338	$332	$326	$321	$315	$310	$305	$300	$295	$290	$286	$281	$277	$273	$269
$1.24	$422	$413	$404	$395	$387	$379	$372	$364	$357	$351	$344	$338	$332	$326	$320	$315	$310	$305	$300	$295	$290	$286	$281	$277	$273
$1.26	$429	$419	$410	$402	$393	$385	$378	$370	$363	$356	$350	$343	$337	$331	$325	$320	$315	$309	$304	$300	$295	$290	$286	$282	$278
$1.28	$436	$426	$417	$408	$400	$391	$384	$376	$369	$362	$355	$349	$342	$336	$331	$325	$320	$314	$309	$304	$300	$295	$291	$286	$282
$1.30	$443	$433	$423	$414	$406	$397	$390	$382	$375	$367	$361	$354	$348	$342	$336	$330	$325	$319	$314	$309	$304	$300	$295	$291	$286
$1.32	$449	$439	$430	$421	$412	$404	$396	$388	$380	$373	$366	$360	$353	$347	$341	$335	$330	$324	$319	$314	$309	$304	$300	$295	$291
$1.34	$456	$446	$436	$427	$418	$410	$402	$394	$386	$379	$372	$365	$358	$352	$346	$340	$335	$329	$324	$319	$314	$309	$304	$300	$295
$1.36	$463	$453	$443	$434	$424	$416	$407	$400	$392	$384	$377	$370	$364	$357	$351	$345	$340	$334	$329	$323	$318	$313	$309	$304	$300
$1.38	$470	$459	$449	$440	$431	$422	$413	$405	$398	$390	$383	$376	$369	$363	$356	$350	$345	$339	$333	$328	$323	$318	$313	$309	$304
$1.40	$477	$466	$456	$446	$437	$428	$419	$411	$403	$396	$388	$381	$375	$368	$362	$355	$350	$344	$338	$333	$328	$323	$318	$313	$308
$1.42	$483	$473	$462	$453	$443	$434	$425	$417	$409	$401	$394	$387	$380	$373	$367	$361	$355	$349	$343	$338	$332	$327	$322	$318	$313
$1.44	$490	$479	$469	$459	$449	$440	$431	$423	$415	$407	$400	$392	$385	$378	$372	$366	$360	$354	$348	$342	$337	$332	$327	$322	$317
$1.46	$497	$486	$475	$465	$456	$446	$437	$429	$421	$413	$405	$398	$391	$384	$377	$371	$365	$359	$353	$347	$342	$337	$331	$326	$322
$1.48	$504	$493	$482	$472	$462	$453	$443	$435	$426	$418	$411	$403	$396	$389	$382	$376	$370	$363	$358	$352	$346	$341	$336	$331	$326
$1.50	$511	$499	$489	$478	$468	$459	$449	$441	$432	$424	$416	$409	$401	$394	$387	$381	$375	$368	$362	$357	$351	$346	$340	$335	$330
$1.52	$518	$506	$495	$485	$474	$465	$455	$447	$438	$430	$422	$414	$407	$400	$393	$386	$380	$373	$367	$361	$356	$350	$345	$340	$335
$1.54	$524	$513	$502	$491	$481	$471	$461	$452	$444	$435	$427	$419	$412	$405	$398	$391	$385	$378	$372	$366	$360	$355	$350	$344	$339
$1.56	$531	$519	$508	$497	$487	$477	$467	$458	$449	$441	$433	$425	$417	$410	$403	$396	$390	$383	$377	$371	$365	$360	$354	$349	$344
$1.58	$538	$526	$515	$504	$493	$483	$473	$464	$455	$447	$438	$430	$423	$415	$408	$401	$395	$388	$382	$376	$370	$364	$359	$353	$348
$1.60	$545	$533	$521	$510	$499	$489	$479	$470	$461	$452	$444	$436	$428	$421	$413	$406	$400	$393	$387	$380	$375	$369	$363	$358	$353
$1.62	$552	$539	$528	$516	$506	$495	$485	$476	$467	$458	$449	$441	$433	$426	$418	$411	$404	$398	$391	$385	$379	$373	$368	$362	$357
$1.64	$558	$546	$534	$523	$512	$501	$491	$482	$472	$464	$455	$447	$439	$431	$424	$416	$409	$403	$396	$390	$384	$378	$372	$367	$361
$1.66	$565	$553	$541	$529	$518	$508	$497	$488	$478	$469	$461	$452	$444	$436	$429	$422	$414	$408	$401	$395	$389	$383	$377	$371	$366
$1.68	$572	$559	$547	$536	$524	$514	$503	$494	$484	$475	$466	$458	$449	$442	$434	$427	$419	$413	$406	$400	$393	$387	$381	$376	$370
$1.70	$579	$566	$554	$542	$531	$520	$509	$499	$490	$481	$472	$463	$455	$447	$439	$432	$424	$418	$411	$404	$398	$392	$386	$380	$375

Table 2: Estimated Annual Operating Costs for Propane Water Heaters

Energy Factor

Fuel Cost per Gallon	0.44	0.45	0.46	0.47	0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.65	0.66	0.67	0.68
$1.75	$652	$638	$624	$611	$598	$586	$574	$563	$552	$542	$532	$522	$513	$504	$495	$487	$478	$471	$463	$456	$449	$442	$435	$428	$422
$1.77	$660	$645	$631	$618	$605	$593	$581	$569	$558	$548	$538	$528	$518	$509	$501	$492	$484	$476	$468	$461	$454	$447	$440	$433	$427
$1.79	$667	$652	$638	$625	$612	$599	$587	$576	$565	$554	$544	$534	$524	$515	$506	$498	$489	$481	$474	$466	$459	$452	$445	$438	$432
$1.81	$675	$660	$645	$632	$619	$606	$594	$582	$571	$560	$550	$540	$530	$521	$512	$503	$495	$487	$479	$471	$464	$457	$450	$443	$437
$1.83	$682	$667	$653	$639	$625	$613	$600	$589	$577	$566	$556	$546	$536	$527	$518	$509	$500	$492	$484	$476	$469	$462	$455	$448	$441
$1.85	$690	$674	$660	$646	$632	$619	$607	$595	$584	$573	$562	$552	$542	$532	$523	$514	$506	$497	$489	$482	$474	$467	$460	$453	$446
$1.87	$697	$682	$667	$653	$639	$626	$613	$601	$590	$579	$568	$558	$548	$538	$529	$520	$511	$503	$495	$487	$479	$472	$465	$458	$451
$1.89	$705	$689	$674	$660	$646	$633	$620	$608	$596	$585	$574	$564	$554	$544	$535	$525	$517	$508	$500	$492	$484	$477	$470	$463	$456
$1.91	$712	$696	$681	$667	$653	$639	$627	$614	$602	$591	$580	$570	$559	$550	$540	$531	$522	$514	$505	$497	$490	$482	$475	$468	$461
$1.93	$719	$704	$688	$674	$660	$646	$633	$621	$609	$597	$586	$576	$565	$555	$546	$537	$528	$519	$511	$503	$495	$487	$480	$473	$466
$1.95	$727	$711	$695	$681	$666	$653	$640	$627	$615	$604	$592	$582	$571	$561	$551	$542	$533	$524	$516	$508	$500	$492	$485	$477	$470
$1.97	$734	$718	$702	$688	$673	$659	$646	$634	$621	$610	$598	$588	$577	$567	$557	$548	$539	$530	$521	$513	$505	$497	$490	$482	$475
$1.99	$742	$725	$710	$695	$680	$666	$653	$640	$628	$616	$604	$593	$583	$573	$563	$553	$544	$535	$526	$518	$510	$502	$495	$487	$480
$2.01	$749	$733	$717	$701	$687	$673	$659	$646	$634	$622	$611	$599	$589	$578	$568	$559	$550	$540	$532	$523	$515	$507	$500	$492	$485
$2.03	$757	$740	$724	$708	$694	$680	$666	$653	$640	$628	$617	$605	$595	$584	$574	$564	$555	$546	$537	$529	$520	$512	$505	$497	$490
$2.05	$764	$747	$731	$715	$701	$686	$673	$659	$647	$634	$623	$611	$600	$590	$580	$570	$560	$551	$542	$534	$525	$517	$509	$502	$495
$2.07	$772	$755	$738	$722	$707	$693	$679	$666	$653	$641	$629	$617	$606	$596	$585	$575	$566	$557	$548	$539	$531	$522	$514	$507	$499
$2.09	$779	$762	$745	$729	$714	$700	$686	$672	$659	$647	$635	$623	$612	$601	$591	$581	$571	$562	$553	$544	$536	$527	$519	$512	$504
$2.11	$787	$769	$752	$736	$721	$706	$692	$679	$666	$653	$641	$629	$618	$607	$597	$587	$577	$567	$558	$549	$541	$532	$524	$517	$509
$2.13	$794	$776	$760	$743	$728	$713	$699	$685	$672	$659	$647	$635	$624	$613	$602	$592	$582	$573	$564	$555	$546	$538	$529	$521	$514
$2.15	$802	$784	$767	$750	$735	$720	$705	$692	$678	$665	$653	$641	$630	$619	$608	$598	$588	$578	$569	$560	$551	$543	$534	$526	$519
$2.17	$809	$791	$774	$757	$742	$726	$712	$698	$685	$672	$659	$647	$636	$624	$614	$603	$593	$584	$574	$565	$556	$548	$539	$531	$523
$2.19	$816	$798	$781	$764	$748	$733	$718	$704	$691	$678	$665	$653	$641	$630	$619	$609	$599	$589	$579	$570	$561	$553	$544	$536	$528
$2.21	$824	$806	$788	$771	$755	$740	$725	$711	$697	$684	$671	$659	$647	$636	$625	$614	$604	$594	$585	$575	$566	$558	$549	$541	$533
$2.23	$831	$813	$795	$778	$762	$747	$732	$717	$703	$690	$677	$665	$653	$642	$631	$620	$610	$600	$590	$581	$572	$563	$554	$546	$538
$2.25	$839	$820	$802	$785	$769	$753	$738	$724	$710	$696	$683	$671	$659	$647	$636	$626	$615	$605	$595	$586	$577	$568	$559	$551	$543

Table 3: Estimated Annual Operating Costs for Oil Water Heaters

Energy Factor

Fuel Cost per Gallon	0.50	0.51	0.52	0.53	0.54	0.55	0.56	0.57	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.65
$1.75	$378	$371	$364	$357	$350	$344	$338	$332	$326	$320	$315	$310	$305	$300	$295	$291
$1.80	$389	$381	$374	$367	$360	$353	$347	$341	$335	$330	$324	$319	$314	$309	$304	$299
$1.85	$400	$392	$384	$377	$370	$363	$357	$351	$345	$339	$333	$328	$322	$317	$312	$307
$1.90	$410	$402	$395	$387	$380	$373	$366	$360	$354	$348	$342	$336	$331	$326	$321	$316
$1.95	$421	$413	$405	$397	$390	$383	$376	$370	$363	$357	$351	$345	$340	$334	$329	$324
$2.00	$432	$424	$415	$408	$400	$393	$386	$379	$372	$366	$360	$354	$348	$343	$338	$332
$2.05	$443	$434	$426	$418	$410	$403	$395	$388	$382	$375	$369	$363	$357	$351	$346	$341
$2.10	$454	$445	$436	$428	$420	$412	$405	$398	$391	$384	$378	$372	$366	$360	$354	$349
$2.15	$464	$455	$447	$438	$430	$422	$415	$407	$400	$394	$387	$381	$375	$369	$363	$357
$2.20	$475	$466	$457	$448	$440	$432	$424	$417	$410	$403	$396	$390	$383	$377	$371	$366
$2.25	$486	$477	$467	$459	$450	$442	$434	$426	$419	$412	$405	$398	$392	$386	$380	$374
$2.30	$497	$487	$478	$469	$460	$452	$444	$436	$428	$421	$414	$407	$401	$394	$388	$382
$2.35	$508	$498	$488	$479	$470	$462	$453	$445	$438	$430	$423	$416	$409	$403	$397	$391
$2.40	$518	$508	$499	$489	$480	$471	$463	$455	$447	$439	$432	$425	$418	$411	$405	$399
$2.45	$529	$519	$509	$499	$490	$481	$473	$464	$456	$449	$441	$434	$427	$420	$413	$407
$2.50	$540	$529	$519	$509	$500	$491	$482	$474	$466	$458	$450	$443	$436	$429	$422	$415
$2.55	$551	$540	$530	$520	$510	$501	$492	$483	$475	$467	$459	$452	$444	$437	$430	$424
$2.60	$562	$551	$540	$530	$520	$511	$501	$493	$484	$476	$468	$460	$453	$446	$439	$432
$2.65	$572	$561	$550	$540	$530	$520	$511	$502	$494	$485	$477	$469	$462	$454	$447	$440
$2.70	$583	$572	$561	$550	$540	$530	$521	$512	$503	$494	$486	$478	$470	$463	$456	$449
$2.75	$594	$582	$571	$560	$550	$540	$530	$521	$512	$503	$495	$487	$479	$471	$464	$457
$2.80	$605	$593	$582	$571	$560	$550	$540	$531	$521	$513	$504	$496	$488	$480	$473	$465
$2.85	$616	$604	$592	$581	$570	$560	$550	$540	$531	$522	$513	$505	$497	$489	$481	$474
$2.90	$626	$614	$602	$591	$580	$570	$559	$550	$540	$531	$522	$514	$505	$497	$489	$482
$2.95	$637	$625	$613	$601	$590	$579	$569	$559	$549	$540	$531	$522	$514	$506	$498	$490
$3.00	$648	$635	$623	$611	$600	$589	$579	$568	$559	$549	$540	$531	$523	$514	$506	$499

Table 4: Estimated Annual Operating Costs for Electric Water Heaters

Energy Factor

Fuel Cost per kWh	0.80	0.81	0.82	0.83	0.84	0.85	0.86	0.87	0.88	0.89	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99
5.0 ¢	$274	$271	$268	$265	$261	$258	$255	$252	$249	$247	$244	$241	$239	$236	$234	$231	$229	$226	$224	$222
5.5 ¢	$302	$298	$295	$291	$288	$284	$281	$278	$274	$271	$268	$265	$263	$260	$257	$254	$252	$249	$246	$244
6.0 ¢	$329	$325	$321	$317	$314	$310	$306	$303	$299	$296	$293	$290	$286	$283	$280	$277	$274	$272	$269	$266
6.5 ¢	$357	$352	$348	$344	$340	$336	$332	$328	$324	$321	$317	$314	$310	$307	$304	$300	$297	$294	$291	$288
7.0 ¢	$384	$379	$375	$370	$366	$362	$357	$353	$349	$345	$342	$338	$334	$331	$327	$324	$320	$317	$314	$310
7.5 ¢	$412	$407	$402	$397	$392	$387	$383	$379	$374	$370	$366	$362	$358	$354	$350	$347	$343	$340	$336	$333
8.0 ¢	$439	$434	$428	$423	$418	$413	$408	$404	$399	$395	$390	$386	$382	$378	$374	$370	$366	$362	$358	$355
8.5 ¢	$467	$461	$455	$450	$444	$439	$434	$429	$424	$419	$415	$410	$406	$401	$397	$393	$389	$385	$381	$377
9.0 ¢	$494	$488	$482	$476	$470	$465	$460	$454	$449	$444	$439	$434	$430	$425	$420	$416	$412	$407	$403	$399
9.5 ¢	$521	$515	$509	$503	$497	$491	$485	$479	$474	$469	$463	$458	$453	$449	$444	$439	$435	$430	$426	$421
10.0 ¢	$549	$542	$535	$529	$523	$517	$511	$505	$499	$493	$488	$483	$477	$472	$467	$462	$457	$453	$448	$444
10.5 ¢	$576	$569	$562	$555	$549	$542	$536	$530	$524	$518	$512	$507	$501	$496	$490	$485	$480	$475	$470	$466
11.0 ¢	$604	$596	$589	$582	$575	$568	$562	$555	$549	$543	$537	$531	$525	$519	$514	$508	$503	$498	$493	$488
11.5 ¢	$631	$623	$616	$608	$601	$594	$587	$580	$574	$567	$561	$555	$549	$543	$537	$532	$526	$521	$515	$510
12.0 ¢	$659	$651	$643	$635	$627	$620	$613	$606	$599	$592	$585	$579	$573	$567	$561	$555	$549	$543	$538	$532
12.5 ¢	$686	$678	$669	$661	$653	$646	$638	$631	$624	$617	$610	$603	$597	$590	$584	$578	$572	$566	$560	$554
13.0 ¢	$714	$705	$696	$688	$680	$672	$664	$656	$649	$641	$634	$627	$620	$614	$607	$601	$595	$588	$582	$577
13.5 ¢	$741	$732	$723	$714	$706	$697	$689	$681	$674	$666	$659	$651	$644	$637	$631	$624	$617	$611	$605	$599
14.0 ¢	$768	$759	$750	$741	$732	$723	$715	$707	$699	$691	$683	$676	$668	$661	$654	$647	$640	$634	$627	$621
14.5 ¢	$796	$786	$776	$767	$758	$749	$740	$732	$724	$715	$707	$700	$692	$685	$677	$670	$663	$656	$650	$643
15.0 ¢	$823	$813	$803	$794	$784	$775	$766	$757	$748	$740	$732	$724	$716	$708	$701	$693	$686	$679	$672	$665
15.5 ¢	$851	$840	$830	$820	$810	$801	$791	$782	$773	$765	$756	$748	$740	$732	$724	$716	$709	$702	$694	$687
16.0 ¢	$878	$867	$857	$846	$836	$827	$817	$808	$798	$789	$781	$772	$764	$755	$747	$740	$732	$724	$717	$710
16.5 ¢	$906	$894	$884	$873	$863	$852	$842	$833	$823	$814	$805	$796	$788	$779	$771	$763	$755	$747	$739	$732
17.0 ¢	$933	$922	$910	$899	$889	$878	$868	$858	$848	$839	$829	$820	$811	$803	$794	$786	$778	$770	$762	$754

Table 5: Estimated Annual Operating Costs for Heat Pump Water Heaters With and Without Tank

Energy Factor

Fuel Cost per kWh	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
5.0 ¢	$146	$137	$129	$122	$116	$110	$105	$100	$95	$91	$88	$84	$81	$78	$76	$73	$71	$69	$67	$65
5.5 ¢	$161	$151	$142	$134	$127	$121	$115	$110	$105	$101	$97	$93	$89	$86	$83	$81	$78	$75	$73	$71
6.0 ¢	$176	$165	$155	$146	$139	$132	$125	$120	$115	$110	$105	$101	$98	$94	$91	$88	$85	$82	$80	$77
6.5 ¢	$190	$178	$168	$159	$150	$143	$136	$130	$124	$119	$114	$110	$106	$102	$98	$95	$92	$89	$86	$84
7.0 ¢	$205	$192	$181	$171	$162	$154	$146	$140	$134	$128	$123	$118	$114	$110	$106	$102	$99	$96	$93	$90
7.5 ¢	$220	$206	$194	$183	$173	$165	$157	$150	$143	$137	$132	$127	$122	$118	$114	$110	$106	$103	$100	$97
8.0 ¢	$234	$220	$207	$195	$185	$176	$167	$160	$153	$146	$141	$135	$130	$125	$121	$117	$113	$110	$106	$103
8.5 ¢	$249	$233	$220	$207	$196	$187	$178	$170	$162	$156	$149	$144	$138	$133	$129	$124	$120	$117	$113	$110
9.0 ¢	$263	$247	$232	$220	$208	$198	$188	$180	$172	$165	$158	$152	$146	$141	$136	$132	$127	$123	$120	$116
9.5 ¢	$278	$261	$245	$232	$220	$209	$199	$190	$181	$174	$167	$160	$154	$149	$144	$139	$135	$130	$126	$123
10.0 ¢	$293	$274	$258	$244	$231	$220	$209	$200	$191	$183	$176	$169	$163	$157	$151	$146	$142	$137	$133	$129
10.5 ¢	$307	$288	$271	$256	$243	$231	$220	$210	$200	$192	$184	$177	$171	$165	$159	$154	$149	$144	$140	$136
11.0 ¢	$322	$302	$284	$268	$254	$242	$230	$220	$210	$201	$193	$186	$179	$173	$167	$161	$156	$151	$146	$142
11.5 ¢	$337	$316	$297	$281	$266	$252	$240	$230	$220	$210	$202	$194	$187	$180	$174	$168	$163	$158	$153	$149
12.0 ¢	$351	$329	$310	$293	$277	$263	$251	$240	$229	$220	$211	$203	$195	$188	$182	$176	$170	$165	$160	$155
12.5 ¢	$366	$343	$323	$305	$289	$274	$261	$249	$239	$229	$220	$211	$203	$196	$189	$183	$177	$172	$166	$161
13.0 ¢	$381	$357	$336	$317	$300	$285	$272	$259	$248	$238	$228	$220	$211	$204	$197	$190	$184	$178	$173	$168
13.5 ¢	$395	$370	$349	$329	$312	$296	$282	$269	$258	$247	$237	$228	$220	$212	$204	$198	$191	$185	$180	$174
14.0 ¢	$410	$384	$362	$342	$324	$307	$293	$279	$267	$256	$246	$236	$228	$220	$212	$205	$198	$192	$186	$181
14.5 ¢	$424	$398	$375	$354	$335	$318	$303	$289	$277	$265	$255	$245	$236	$227	$220	$212	$205	$199	$193	$187
15.0 ¢	$439	$412	$387	$366	$347	$329	$314	$299	$286	$274	$263	$253	$244	$235	$227	$220	$212	$206	$200	$194
15.5 ¢	$454	$425	$400	$378	$358	$340	$324	$309	$296	$284	$272	$262	$252	$243	$235	$227	$220	$213	$206	$200
16.0 ¢	$468	$439	$413	$390	$370	$351	$335	$319	$305	$293	$281	$270	$260	$251	$242	$234	$227	$220	$213	$207
16.5 ¢	$483	$453	$426	$403	$381	$362	$345	$329	$315	$302	$290	$279	$268	$259	$250	$242	$234	$226	$220	$213
17.0 ¢	$498	$467	$439	$415	$393	$373	$355	$339	$325	$311	$299	$287	$276	$267	$257	$249	$241	$233	$226	$220

SECTION 3 - ELECTRIC WATER HEATERS

RANGES OF COMPARABILITY FOR ELECTRIC WATER HEATERS

As described on pages 144 and 145, the first criteria for selecting a water heater is First Hour Rating. Only after you know what First Hour Rating is needed to meet your hot water needs should consideration be given to the efficiency of the water heater. To assist in this selection process, the following chart shows the range of efficiency (lowest and highest Energy Factor) and corresponding range of estimated energy consumption for all the electric water heaters listed in this chapter within a range of First Hour Rating as specified by the Federal Trade Commission for use on water heater EnergyGuide labels.

The Federal Trade Commission also specifies the following national average energy costs for use on water heater EnergyGuide labels:

Electricity	8.60¢ per kWh
Natural Gas	91.0¢ per therm
Propane Gas	$1.23 per gallon ($1.35 per therm)
No. 2 Heating Oil	$1.28 per gallon ($0.92 per therm)

ELECTRIC WATER HEATERS

First Hour Rating	Range (EF)		Range (of Estimated Annual Energy Consumption) (kWh/year)	
Less than 21	.93	.93	4721	4721
21 to 24	*	*	*	*
25 to 29	.93	.93	4721	4721
30 to 34	.92	.93	4773	4721
35 to 40	.92	.94	4773	4671
41 to 47	.92	.95	4773	4622
48 to 55	.90	.95	4879	4622
56 to 64	.90	.95	4879	4622
65 to 74	.88	.95	4990	4622
75 to 86	.86	.95	5106	4622
87 to 99	.85	.93	5166	4721
100 to 114	.81	.91	5421	4825
115 to 131	.82	.86	5355	5106
Over 131	*	*	*	*

* No models in this range listed in this edition

By referring to the sample calculation on page 154 and using the national average energy costs above, you can estimate the annual energy cost of a water heater at a given Energy Factor. Tables 1 through 5 on pages 155 through 159 show the estimated annual energy cost calculated for various fuel costs and various Energy Factors.

AMERICAN WATER HEATER COMPANY

Trade Name(s): Ace, American, American Hardware, Americas Best, Apex, Aqua Temp, Aqua Therm, Aquamatic, Best, Best Deluxe, Champion, Craftmaster, De-Limer, Deluxe, Eagle, Envirotemp, Four Most, Hotmaster, Hotstream, King-Kleen, King-Line, Master Plumber, Nationaline, Neptune, Penquin, Premier Plus, Premier Plus Self Cleaning Prestige, Prestige, ProLine, ProLine Plus, Quaker, Quick-Flo, Raywall, Revere, Riveria, Sands, Sentinal, Servi-Star, Shamrock, Special Deluxe, Standard, Super Eagle, Super-Flo, Supreme, Sure-Fire, The Earls Energy Conservation Water Heater, The Earl's Energy Saver Plus, Thoro-Clean, Tru Value, True-Test, U.S. Supply, XCL Energy Saver

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
E*2-30L****	1,9,12,13,16,18	40	0.93	28	4.5
E*2-30H****	1,9,12,13,16,18	43	0.93	30	4.5
E*2-30H*H***	1,9,12,13,16,18	43	0.93	30	4.5
E*2-38T****	1,9,12,13,16,18	45	0.88	38	4.5
E*1-40L****	1,9,12,13,16,18	45	0.92	38	4.5
E*2-40L****	1,9,12,13,16,18	45	0.92	38	4.5
E*2-40H****	1,9,12,13,16,18	50	0.92	40	4.5
E*3-40H****	1,9,12,13,16,18	50	0.92	40	4.5
EE*2-40H*******	1,9,12,13,18	50	0.92	40	4.5
EE*3-40H*******	1,9,12,13,18	50	0.92	40	4.5
E*1-50L****	1,9,12,13,16,18	52	0.91	47	4.5
E*2-50L****	1,9,12,13,16,18	52	0.91	47	4.5
E*2-40R****	1,9,12,13,16,18	54	0.92	40	4.5
E*3-40R*H***	1,9,12,13,16,18	54	0.92	40	4.5
EE*2-40R*******	1,9,12,13,18	54	0.92	40	4.5
EE*3-40R*******	1,9,12,13,18	54	0.95	40	4.5
EE*2-50H*******	1,9,12,13,18	55	0.92	50	4.5
EE*3-50H*******	1,9,12,13,18	55	0.93	50	4.5
E*1-50R****	1,9,12,13,16,18	58	0.90	50	4.5
E*2-50R******	1,9,12,13,16,18	58	0.91	50	4.5
EE*2-50R*******	1,9,12,13,18	58	0.92	50	4.5
E*3-50R*C***	1,9,12,13,16,18	58	0.93	50	4.5
EZ3-50R****C***	1,9,12,13,18	58	0.93	50	4.5
EE*3-50R*******	1,9,12,13,18	58	0.95	50	4.5
E*2-50H****	1,9,12,13,16,18	68	0.91	50	4.5
E*3-50H*O***	1,9,12,13,16,18	68	0.93	50	4.5
E*2-65H****	1,9,12,13,16,18	73	0.90	66	4.5
EE*2-65H*******	1,9,12,13,18	73	0.90	66	4.5
E*3-65H*C***	1,9,12,13,16,18	73	0.91	66	4.5
EE*3-65H*******	1,9,12,13,18	73	0.92	66	4.5
****E*2-80H*******	1,9,12,13,16,17,18	89	0.87	80	4.5
EE*2-80H*******	1,9,12,13,18	89	0.90	80	4.5
E*3-80H*C***	1,9,12,13,16,18	89	0.91	80	4.5
EE*3-80H*******	1,9,12,13,18	89	0.92	80	4.5
****E*2-119R****C**	1,9,12,13,16,17,18	115	0.83	119	4.5

Additional Footnotes

9. First asterisk after letter "E" may be replaced with any number (1, 3, 5, 6, 8, 9, 10, or 12) signifying warranty period.
12. First three asterisks after model number are total wattage.
13. May have any combination of the following suffixes: M, V, or X.
16. May have prefix "LDC".
17. May have prefix "S".
18. May have suffix "D" or "S".

BRADFORD WHITE CORPORATION

Trade Name(s): Bradford White, Jetglas

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
M230U**S(A)	16,22	19	0.93	30	4.5
M230U**S(B)	1,16,22	19	0.93	30	4.5
M2WH30L**S(A)	1,16,22	19	0.93	30	4.5
M2WH30L**S(B)	1,16,22	19	0.93	30	4.5
M2WH30L**S2	3	19	0.93	30	1.5
M130L**S(A)	1,16,20,22	47	0.93	30	4.5
M130L**S(B)	1,16,22	47	0.93	30	4.5
M130L**S3	1,3,20	47	0.93	30	4.5
M130L**S5	1,3,6,20	47	0.93	30	4.5
M230L**S(A)	1,16,22	47	0.94	30	4.5
M230L**S(B)	1,16,22	47	0.94	30	4.5
M230L**S3	1,3	47	0.94	30	4.5
M230L**S5	1,3,6	47	0.94	30	4.5
M230R**S(A)	1,16,22	50	0.93	30	4.5
M230R**S(B)	1,16,22	50	0.93	30	4.5
M230R**S2	3	50	0.93	30	4.5
M230R**S5	1,3,6	50	0.93	30	4.5
M240S**S(A)	1,16,22	56	0.92	40	4.5
M240S**S(B)	1,16,22	56	0.92	40	4.5
M240S**S2	3	56	0.92	40	4.5
M240S**S5	1,3,6	56	0.92	40	4.5
M240T**S(A)	1,16,22	56	0.92	40	4.5
M240T**S(B)	1,16,22	56	0.92	40	4.5
M240T**S5	1,3,6	56	0.92	40	4.5
# M2HE40S**S(B)	1,16,19,22	57	0.93	40	4.5
M2HE40S**S3	1,3,19	57	0.93	40	4.5
M2HE40S**S5	1,3,6	57	0.93	40	4.5
M140L**S(A)	1,16,20,22	58	0.92	40	4.5
M140L**S(B)	1,16,22	58	0.92	40	4.5
M140L**S3	1,3,20	58	0.92	40	4.5
M140L**S7	1,3,6	58	0.92	40	4.5
M-II-40S***S-15	1	58	0.92	40	4.5
M240L**S(A)	1,16,22	58	0.93	40	4.5
M240L**S(B)	1,16,22	58	0.93	40	4.5
M240L**S3	1,3	58	0.93	40	4.5
M240L**S5	1,3,6	58	0.93	40	4.5
M-III-50T***S-17	1,5,6,14,16,17,18	60	0.92	50	4.5
M-III-40T***S-13	1,5,6,14,16,17,18	61	0.93	40	4.5
M250T**S(A)	1,16,22	67	0.90	50	4.5
M250T**S(B)	1,16,22	67	0.90	50	4.5
M250T**S2	3	67	0.90	50	4.5
M250T**S5	1,3,6	67	0.90	50	4.5
M150L**S(A)	1,16,20,22	67	0.91	47	4.5
M150L**S(B)	1,16,22	67	0.91	47	4.5
M150L**S5	1,3,6,20	67	0.91	47	4.5
M250L**S(A)	1,16,22	67	0.91	47	4.5
M250L**S(B)	1,16,22	67	0.91	47	4.5
M250L**S7	1,3,6	67	0.91	47	4.5
M-II-50S**DS-21	1,5,6,14,16,17,18	67	0.91	50	4.5
M250S**S(A)	1,16,20,22	67	0.92	50	4.5
M250S**S(B)	1,16,22	67	0.92	50	4.5
M250S**S2	3	67	0.92	50	4.5
M250S**S5	1,3,6	67	0.92	50	4.5
M2HE50S**S(A)	1,16,22	67	0.93	50	4.5
# M2HE50S**S(B)	1,16,19,22	67	0.93	50	4.5
M2HE50S**S3	1,3,19	67	0.93	50	4.5
M2HE50S**S5	1,3,6	67	0.93	50	4.5
MIII50T***S-19	1,5,6,14,16,17,18	71	0.93	50	4.5
M265R**S(A)	1,16,22	77	0.89	65	4.5
M265R**S(B)	1,16,22	77	0.89	65	4.5
M265R**S2	3	77	0.89	65	4.5
M265R**S5	1,3,6	77	0.89	65	4.5
M-II-65R***S-17	1,5,6,14,16,17,18	77	0.89	65	4.5
M2HE65R**S(A)	1,16,22	77	0.91	65	4.5
# M2HE65R**S(B)	1,16,19,22	77	0.91	65	4.5
M2HE65R**S3	1,3,19	77	0.91	65	4.5
M2HE65R**S5	1,3,6	77	0.91	65	4.5
M-III-65R***S-13	1,5,6,14,16,17,18	77	0.91	65	4.5
M-III-65R***S-17	1,5,6,14,16,17,18	77	0.91	65	4.5
M-II-80R***S-13	1,5,6,14,16,17,18	90	0.87	80	4.5
M180R**S(A)	1,16,22	92	0.86	80	4.5
M180R**S(B)	1,16,22	92	0.86	80	4.5
M180R**S3	1,3,19	92	0.86	80	4.5
M180R**S5	1,3,6	92	0.86	80	4.5
M280R**S(A)	1,16,22	92	0.88	80	4.5
M280R**S(B)	1,16,22	92	0.88	80	4.5
M280R**S2	3	92	0.88	80	4.5
M2HE80R**S(A)	1,16,22	92	0.91	80	4.5
# M2HE80R**S(B)	1,16,19,22	92	0.91	80	4.5
M2HE80R**S3	1,3,19	92	0.91	80	4.5

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model

Rating Voluntarily Revised Since Last Directory

✠ Rating Revised By Program Since Last Directory

BRADFORD WHITE CORPORATION

Trade Name(s): Bradford White, Jetglas

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
M2HE80R**S5	1,3,6	92	0.91	80	4.5
M-II-120R***S-15	1,5,6,14,16,17,18	118	0.84	119	4.5
M2120R**S(A)	16,22	118	0.85	119	4.5
M2120R**S(B)	1,16,22	118	0.85	119	4.5
M2120R**S2	3	118	0.85	119	4.5
Discontinued Models					
M230U**S2	3	19	0.93	30	1.5
M240T**S2	3	56	0.92	40	4.5
✠M2HE40S**S(A)	1,16,22	57	0.93	40	4.5
M-III-80R***S-13	1,5,6,14,16,17,18	90	0.91	80	4.5
M280R**S5	1,3,6	92	0.86	80	4.5

Additional Footnotes

3. * Indicates a letter A-Z or a number 0-9.
5. An additional "S" may be added as a suffix to indicate screw in elements.
6. An additional number suffix may be added to indicate an engineering change.
14. The "S" may be replaced by a "D".
16. Asterisks may be replaced by the letters "S" or "D" or the numbers 0, 1, 2, 3, 4, 5, 6, 7, 8, or 9.
17. -12 may be substituted for -14. -16 may be substituted for -17.
18. The M or J prefix in the model number may be replaced with A, B, D, P, PH, or R.
19. Pipe Insulation
20. Insulation Jacket
22. Letter inside ( ) is Engineering Revision Level

GSW WATER HEATING COMPANY

Trade Name(s): Medal, Moffat, GSW, John Wood

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
30 LSEB1		26	0.93	30	3.0
30 LDE	1,5	42	0.93	30	4.5
30 SDE	1,5	42	0.93	30	4.5
40 LDE	1,5	44	0.92	40	4.5
40 SDE	1,5	51	0.92	40	4.5
50 LDE	1,5	52	0.91	46	4.5
40 TDE	1,5	52	0.92	40	4.5
50 TDE	1,5	58	0.90	50	4.5
50TDE3	1,5	58	0.90	50	4.5
50 SDE	1,5	60	0.90	50	4.5
66 SDE	1,5	75	0.88	66	4.5
80 SDE	1,5	85	0.86	80	4.5
80SDE3	1,5	85	0.86	80	4.5
119SDE		105	0.82	119	4.5

Additional Footnotes

5. Includes Pipe Insulation

LOCHINVAR CORPORATION

Trade Name(s): Energy Saver, Golden Knight, Knight

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
ETA040KK-3	1,8,9	53	0.93	40	4.5
STA040KK-3	1,8,9	53	0.93	40	4.5
ETA052K-FF-1	1,8,9	59	0.91	50	4.5
STA052K-FF-1	1,8,9	59	0.91	50	4.5
ETA052KK-3	1,8,9	63	0.93	50	4.5
STA052KK-3	1,8,9	63	0.93	50	4.5
ETA066K-FF-1	1,8,9	72	0.89	65	4.5
STA066K-FF-1	1,8,9	72	0.89	65	4.5
ETA066KK-3	1,8,9	72	0.91	65	4.5
STA066KK-3	1,8,9	72	0.91	65	4.5
ETA082K-FF-1	1,8,9	87	0.87	80	4.5
STA082K-FF-1	1,8,9	87	0.87	80	4.5
ETA082KK-3	1,8,9	87	0.91	80	4.5
STA082KK-3	1,8,9	87	0.91	80	4.5
ETA120KK-1	1,8,9	105	0.84	119	4.5
STA120KK-1	1,8,9	105	0.84	119	4.5

Trade Name(s): Energy Saver, Golden Knight, Knight, Lochinvar

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
JRC031E	10,11,12,13	17	0.93	30	1.5
LSA030KK	1,10,11,12,13	40	0.93	30	4.5
XSA030KK	1,10,11,12,13	40	0.93	30	4.5
LTA030KK	10,11,12,13	43	0.93	30	4.5
LSA040KK	1,10,11,12,13	47	0.92	40	4.5
XSA040KK	1,10,11,12,13	47	0.92	40	4.5
LSA050KK	1,10,11,12,13	52	0.90	50	4.5
XSA050KK	1,10,11,12,13	52	0.90	50	4.5
LTA040KK	10,11,12,13	53	0.92	40	4.5
XTA040KK	10,11,12,13	53	0.92	40	4.5
LTA041KK	1,10,11,12,13	53	0.93	40	4.5
XTA041KK	1,10,11,12,13	53	0.93	40	4.5
LTA040KK-T	1,10,11,12,13	56	0.92	40	4.5
LTA040K-T	1,10,11,12,13	56	0.92	40	4.5
XTA040KK-T	1,10,11,12,13	56	0.92	40	4.5
XTA040K-T	1,10,11,12,13	56	0.92	40	4.5
LTA052KK	10,11,12,13	59	0.90	50	4.5
XTA052KK	10,11,12,13	59	0.90	50	4.5
LTA052KK-T	10,11,12,13	63	0.90	50	4.5
XTA052KK-T	10,11,12,13	63	0.90	50	4.5
LTA051KK	1,10,11,12,13	63	0.93	50	4.5
XTA051KK	1,10,11,12,13	63	0.93	50	4.5
LTA066KK	10,11,12,13	72	0.88	65	4.5
XTA066KK	10,11,12,13	72	0.88	65	4.5
LTA065KK	1,10,11,12,13	72	0.91	65	4.5
XTA065KK	1,10,11,12,13	72	0.91	65	4.5
LTA082KK	10,11,12,13	87	0.87	80	4.5
XTA082KK	10,11,12,13	87	0.87	80	4.5
LTA081KK	1,10,11,12,13	87	0.91	80	4.5
XTA081KK	1,10,11,12,13	87	0.91	80	4.5
ETA082K	1,10,11,12,13	92	0.86	80	4.5
ETA082KK	1,10,11,12,13	92	0.86	80	4.5
STA082K	1,10,11,12,13	92	0.86	80	4.5
STA082KK	1,10,11,12,13	92	0.86	80	4.5
LTA120KK	10,11,12,13	105	0.84	119	4.5
XTA120KK	10,11,12,13	105	0.84	119	4.5
Discontinued Models					
XTA030KK	10,11,12,13	43	0.93	30	4.5

Trade Name(s): Lochinvar

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
XTA030KK(B)	1,22	43	0.93	30	4.5

Additional Footnotes

8. The model number may be further suffixed with a "K" to denote double element heater.
9. "K" may be replaced with one or two of the following: A, B, C, D, E, F, G, H, I, J, K, L, M, N, or P, to denote element wattages other than 4500.
10. "K" in model number refers to quantity of elements
11. K=Single Element
12. KK=Double Element
13. Most models offered with single or double element configuration

MARATHON WATER HEATER COMPANY

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
MR30230 B		35	0.94	30	3.0
MR30238 B		39	0.94	30	3.8
UCON30238 B		39	0.94	30	3.8
MR30245 B		42	0.94	30	4.5
UCON30245 B		42	0.94	30	4.5
MR40230 B		45	0.94	40	3.0
✠MSR50230 B		48	0.90	50	3.0
MR40238 B		48	0.94	40	3.8
UCON40238 B		48	0.94	40	3.8
✠MSR50238 B		51	0.90	50	3.8
UCONS50238 B		51	0.94	50	3.8
MR40245 B		52	0.94	40	4.5
UCON40245 B		52	0.94	40	4.5
✠MSR50245 B		54	0.90	50	4.5
UCONS50245 B		54	0.94	50	4.5
MR50230 B		55	0.94	50	3.0
MR50238 B		58	0.94	50	3.8
UCON50238 B		58	0.94	50	3.8
MR50245 B		61	0.94	50	4.5
UCON50245 B		61	0.94	50	4.5
MR75230 B		72	0.92	75	3.0
MR75238 B		75	0.92	75	3.8

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model

Rating Voluntarily Revised Since Last Directory

✠ Rating Revised By Program Since Last Directory

MARATHON WATER HEATER COMPANY

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
UCON75238 B		75	0.92	75	3.8
MR75245 B		78	0.92	75	4.5
UCON75245 B		78	0.92	75	4.5
MR85230 B		84	0.92	85	3.0
MR85238 B		87	0.92	85	3.8
UCON85238 B		87	0.92	85	3.8
MR85245 B		91	0.92	85	4.5
UCON85245 B		91	0.92	85	4.5
MR105230 B		97	0.91	105	3.0
MR105238 B		101	0.91	105	3.8
UCON105238 B		101	0.91	105	3.8
MR105245 B		104	0.91	105	4.5
UCON105245 B		104	0.91	105	4.5
Trade Name(s): Marathon					
MRE85238 B		87	0.92	85	3.8

MAYTAG

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
Trade Name(s): Maytag					
HRE29 30TW	1	40	0.93	30	3.8
HR6 30 DJLS	1,9	41	0.93	30	4.5
HR6 30 DJRT	1,9	43	0.93	30	4.5
HRE29 40L	1	45	0.92	40	3.8
HR6 40 DJLNS	1,9	48	0.92	38	4.5
HRE29 40 LN	1,9	48	0.92	38	4.5
HRX 40 DJLNS	1,9	48	0.92	38	4.5
HRE29 40S	1	49	0.92	40	3.8
HRE29 40T	1,7	49	0.92	40	3.8
# HR6 30 DERT	1,7	51	0.95	30	5.5
# HRX 30 DERT	1,7	51	0.95	30	5.5
HR6 40 DJT4 W*	1	52	0.88	40	4.5
HRX 40 DJT4 W*	1	52	0.88	40	4.5
HR6 40 DJRS	1,9	52	0.92	40	4.5
HR6 40 DJRT	9	52	0.92	40	4.5
HR6 50 DJLS	1,9	55	0.91	50	4.5
# HRE29 50T	1,7	57	0.91	50	3.8
HRE212 50PC	1,7	57	0.95	50	3.8
HR6 40 DERT	1,7	58	0.93	40	5.5
HRX 40 DERT	1,7	58	0.93	40	5.5
HRE29 50S	1,7	59	0.90	50	3.8
# HR6 52 DJRT	9	60	0.91	50	4.5
HR6 40 DERS	1,7	60	0.93	40	5.5
HRX 40 DERS	1,7	60	0.93	40	5.5
HRE212 82PC	1,7	60	0.95	80	3.8
HR6 50 DJRS	1,9	62	0.90	50	4.5
HR6 52 DERT	1,7	64	0.93	50	5.5
HRX 52 DERT	1,7	64	0.93	50	5.5
HRE29 66T	1,7	69	0.88	66	3.8
HR6 66 DJRT	9	72	0.88	66	4.5
HR6 66 DERT	1,7	80	0.93	66	5.5
HRX 66 DERT	1,7	80	0.93	66	5.5
HR6 82 DJRT	9	81	0.86	80	4.5
HR6 82 DERT	1,7	91	0.93	80	5.5
HRX 82 DERT	1,7	91	0.93	80	5.5
HR6 120 DJRT	9	112	0.81	119	4.5
Discontinued Models					
HM3 30 SHMSE 3	2,9	43	0.93	30	3.8
HR6 40 DJLS	1,9	48	0.92	40	4.5
HRE212 40S	1,7	49	0.95	40	3.8
HE2**40S	3,4	51	0.93	40	3.8
HE3**40S	3,4	51	0.93	40	3.8
HM3 40 SHMSE 3	2,9	51	0.93	40	3.8
HX402ERTW	1,3,4	56	0.92	40	4.5
HRE212 50T	1,7	57	0.95	50	3.8
HE2**50S	3,4	58	0.91	50	3.8
HE3**50S	3,4	58	0.91	50	3.8
HE2**50PC***	3,4	58	0.93	50	3.8
HE2**50T	3,4	58	0.93	50	3.8
HE3**50T	3,4	58	0.93	50	3.8
HM3 52 SHMSE 3	2,9	58	0.95	50	3.8
HRE29 50S	1,7	59	0.90	50	3.8
HRE212 50S	1,7	59	0.95	50	3.8
HRE212 82T	1,7	60	0.95	80	3.8
HJ6522JRT2W	1,3,4	62	0.90	50	4.5
HX522ERTW	1,3,4	64	0.91	50	4.5
HR**52 DERS	1,7	66	0.93	50	5.5
HX622ERTW	1,3,4	78	0.88	66	4.5
HE2**82T	3,4	84	0.91	80	3.8
HE3**82T	3,4	84	0.91	80	3.8
HE2**82PC***	3,4	84	0.91	82	3.8
HX822ERTW	1,3,4	90	0.87	80	4.5
HJ61202JRTW	1,3,4	117	0.82	119	4.5

Additional Footnotes

3. (*) indicates 8 or 9 for warranty.
4. (**) indicates X or 12 for warranty.
7. Insulation supplied for Inlet and Outlet connections.
9. Insulation supplied for Inlet & Outlet connections.

RELIANCE WATER HEATER COMPANY

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
Trade Name(s): A.O. Smith					
ECJN 40	1,9	48	0.92	38	4.5
ECLN 40	1,9	48	0.92	38	4.5
PCLN 40	1,9	48	0.92	38	4.5
Trade Name(s): Reliance					
6 30 DOMS	1,14,17	33	0.93	30	1.7
6 30 DOMS*	1	37	0.93	30	4.5
1 30 SOPT	1,14	38	0.93	30	3.8
**40 DOLS	1,9	41	0.93	30	4.5
✠630 2OT1***		42	0.89	27	4.5
✠630 2OT1***W	1	42	0.91	27	4.5
1 30 SOPS	1,9	43	0.93	30	4.5
6 30 DORS	1,9	43	0.93	30	4.5
6 30 DORT	1,9	43	0.93	30	4.5
6 30 SHMS	2,9	43	0.93	30	3.8
6 30 SORS	1,9	43	0.93	30	4.5
# 9 30 DKRT	1,14	47	0.95	30	4.5
6 40 DOLNS	1,9	48	0.92	38	4.5
6 40 SOLNS	1,9	48	0.92	38	4.5
6 30 DOLS	1,9	48	0.92	40	4.5
1 40 SOPT	1,14	49	0.92	40	3.8
6 40 SHMS	2,9	51	0.93	40	3.8
640 2OT4***W	1	52	0.88	40	4.5
1 40 SOPS	1,9	52	0.92	40	4.5
6 40 DORS	1,9	52	0.92	40	4.5
6 40 DORT	9	52	0.92	40	4.5
6 40 SORS	1,9	52	0.92	40	4.5
6 40 DOCT	1,9	54	0.93	40	4.5
9 40 DKRT	1,9	54	0.93	40	4.5
6 50 DOLS	1,9	55	0.91	50	4.5
9 40 DKRS	1,14	56	0.93	40	4.5
12 40 DARS	1,14	56	0.95	40	5.5
1 50 SOPS	1,9	62	0.90	50	4.5
6 50 DORS	1,9	62	0.90	50	4.5
9 50 DKRS	1,9	62	0.93	50	4.5
6 50 DOCT	1	62	0.93	55	4.5
9 50 DKRT	1,14	62	0.93	55	4.5
12 50 DARS	1,14	66	0.95	50	5.5
LT 50 DLRS	1,14	66	0.95	50	5.5
# 6 50 DORT	9	67	0.90	55	4.5
# 12 50 DART	1,14	70	0.95	55	5.5
# LT 50 DLRT	1,14	70	0.95	55	5.5
6 66 DORT	9	72	0.88	66	4.5
6 66 DOCT	1,9	76	0.92	66	4.5
9 66 DKRT	1,9	76	0.92	66	4.5
6 80 DORT	9	81	0.86	80	4.5

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model

Rating Voluntarily Revised Since Last Directory

✠ Rating Revised By Program Since Last Directory

RELIANCE WATER HEATER COMPANY

Trade Name(s): Reliance

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
12 80 DART	1,14	86	0.95	80	5.5
LT 80 DLRT	1,14	86	0.95	80	5.5
6 80 DOCT	1,9	87	0.93	80	4.5
9 80 DKRT	1,9	87	0.93	80	4.5
6 120 DORT	9	112	0.81	119	4.5
Discontinued Models					
**40 DOLS	1,9	41	0.93	30	4.5
** 40 SOLS	1,9	48	0.92	40	4.5

Additional Footnotes

9. Insulation supplied for Inlet & Outlet connections.
14. Insulation supplied for Inlet & Outlet connections.
17. D may be replaced by S to note element usage.

RHEEM MFG. CO., WATER HEATER DIVISION

Trade Name(s): General Electric

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
PE30S09KAG01	1,3,16	29	0.93	30	3.8
PE38S09KAG01	1,3,16	30	0.92	38	3.8
PE40M09KAH00	1,14,16	40	0.92	40	3.8
SE40M12KAH00	1,14,16	40	0.92	40	3.8
GE30S06*	1,3,16	42	0.93	30	4.5
PE30S09*	1,3,16	42	0.93	30	4.5
GE30M06*	1,3,16	44	0.93	30	4.5
GE38S06*	1,3,16	45	0.92	38	4.5
PE38S09*	1,3,16	45	0.92	38	4.5
GE30T06MAG	3,14,16	46	0.93	30	4.5
GE30T06*	1,3,14,16	48	0.93	30	4.5
PE30T09*	1,3,14,16	48	0.93	30	4.5
GE40T06*	3,14,16	50	0.93	40	4.5
GE40M06*	1,14,16	53	0.92	40	4.5
PE40M09AAH00	1,14,16	53	0.92	40	4.5
SE40M12AAH00	1,14,16	53	0.92	40	4.5
GE47S06*	1,3,16	55	0.91	47	4.5
PE40M09*	1,14,16	56	0.93	40	4.5
SE40M12*	1,3,14,16	56	0.94	40	4.5
GE50M06*	1,16	62	0.90	50	4.5
PE50M09AAH00	1,16	62	0.90	50	4.5
SE50M12AAH00	1,16	62	0.90	50	4.5
PE50M09*	1,3,14,16	62	0.93	50	4.5
SE50M12*	1,3,14,16	62	0.93	50	4.5
GE50T06AAG	1,14,16	67	0.91	50	4.5
PE50T09AAH00	1,14,16	67	0.91	50	4.5
SE50T12AAH00	1,14,16	67	0.91	50	4.5
PE50T09*	1,14,16	67	0.93	50	4.5
GE50T06*	1,3,14,16	67	0.94	50	4.5
SE50T12*	1,3,14,16	67	0.94	50	4.5
PE65T09AAH00	1,14,16	71	0.89	65	4.5
PE65T09*	1,3,14,16	71	0.92	65	4.5
GE80T06*	1,14,16	87	0.86	80	4.5
SE80T12AAH00	1,14,16	87	0.86	80	4.5
SE80T12*	1,3,14,16	88	0.92	80	4.5
Discontinued Models					
✠GE40T06AAG	1,16	57	0.92	40	4.5

Trade Name(s): Hotpoint

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
HE30S01*	1,3,16	29	0.93	30	3.8
HE38S01*	1,3,16	30	0.92	38	3.8
HE30T01*	1,3,14,16	33	0.93	30	3.8
HE30M01*	1,3,16	37	0.93	30	3.8
HE40M01*	1,14,16	40	0.92	40	3.8
HE50M01*	1,16	48	0.90	50	3.8

Trade Name(s): Professional

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
RHES PRO30-*-A	1,3,16	42	0.93	30	4.5
RHEM PRO30-*-A	1,3,16	44	0.93	30	4.5
RHES PRO40-*-A	1,3,16	45	0.92	38	4.5
RHESPRO50-*-A	1,3,6	55	0.91	47	4.5
RUESPRO50-*-A	1,3,6	55	0.91	47	4.5
RHE PRO40-*-A	1,3,14,16	56	0.94	40	4.5
RHEM PRO52-*-A	1,3,14,16	62	0.93	50	4.5
RHE PRO52-*-A	1,3,14,16	67	0.94	50	4.5
RHE PRO66-*-A	1,3,14,16	71	0.92	65	4.5
RHE PRO80-*-A	1,3,14,16	88	0.92	80	4.5
Discontinued Models					
✠RHEH PRO40-*-A	1,16	57	0.92	40	4.5

Trade Name(s): Rheem

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
82SV30-*	1,3,16	29	0.93	30	3.8
82SV40-*	1,3,16	30	0.92	38	3.8
82V30-*	1,3,14,16	33	0.93	30	3.8
82MV30-*	1,3,16	37	0.93	30	3.8
82V40-*	1,14,16	40	0.92	40	3.8
82SV30-*	1,3,16	42	0.93	30	4.5
82VP30-*	3,14,16	42	0.93	30	4.5
82MV30-*	1,3,16	44	0.93	30	4.5
82SV40-*	1,3,16	45	0.92	38	4.5
72V30-*	3,14,16	46	0.93	30	4.5
82MV52-*	1,16	48	0.90	50	3.8
82V30-*	1,3,14,16	48	0.93	30	4.5
72V40-*	3,14,16	50	0.93	40	4.5
82V52	1	52	0.91	50	3.8
82V40-*	1,14,16	53	0.92	40	4.5
72V52-*	3,14,16	54	0.91	50	4.5
82SV50-*	1,3,6	55	0.91	47	4.5
83VR40-*	1,3,14,16	56	0.94	40	4.5
82MV52-*	1,16	62	0.90	50	4.5
83MVR52-*	1,3,14,16	62	0.93	50	4.5
82V52-*	1,14,16	67	0.91	50	4.5
83VR52-*	1,3,14,16	67	0.94	50	4.5
82V66-*	1,14,16	71	0.89	65	4.5
83VR66-*	1,3,14,16	71	0.92	65	4.5
82V80-*	1,14,16	87	0.86	80	4.5
83VR80-*	1,3,14,16	88	0.92	80	4.5
82V120-2	1	99	0.85	119	4.5
Discontinued Models					
✠82VH40-*	1,16	57	0.92	40	4.5

Trade Name(s): Rheem-Ruud Light Duty Electric

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
EGSP30-B	3,14,16	42	0.93	30	4.5
ELDS30-B	1,3,16	42	0.93	30	4.5
ELDS40-B	1,3,16	45	0.92	38	4.5
ELD30-B	1,3,14,16	48	0.93	30	4.5
ELDS52-B	1,3	55	0.91	47	4.5
ELD40-B	1,3,14,16	56	0.94	40	4.5
ELD52-B	1,3,14,16	67	0.94	50	4.5
ELD66-B	1,3,14,16	71	0.92	65	4.5
ELD80-B	1,3,14,16	88	0.92	80	4.5
ELD120-B	1	99	0.85	119	4.5

Trade Name(s): Vanguard

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
3WA67	1,3,16	42	0.93	30	4.5
3WA79	3,14,16	42	0.93	30	4.5
3WA69	1,3,16	45	0.92	38	4.5
3WA66	1,3,14,16	48	0.93	30	4.5
3WA68	1,14,16	53	0.92	40	4.5
3WA72	1,3	55	0.91	47	4.5
3WA70	1,3,14,16	56	0.94	40	4.5
3WA71	1,14,16	67	0.91	50	4.5
3WA73	1,3,14,16	67	0.94	50	4.5
3WA74	1,14,16	71	0.89	65	4.5
3WA75	1,14,16	87	0.86	80	4.5
3WA76	1,3,14,16	88	0.92	80	4.5
3WA77(78)	1	99	0.85	119	4.5

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model

\# Rating Voluntarily Revised Since Last Directory
✠ Rating Revised By Program Since Last Directory

Additional Footnotes

3. Pipe insulation.
6. The "*" denotes the single or double element model and may be replaced by the following numbers: 1 or 2.
14. * in the model number denotes warranty and may be replaced: I, -, V, or X.
16. * as a suffix or preceding -A; may be replaced by: 1, 2, AAG, AAH, KAG, KAH, MAG, MAH, TAG, TAH, SAG, or SAH.

RICHMOND WATER HEATERS

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
Discontinued Models					
✠82VH40-*	1,16	57	0.92	40	4.5
Trade Name(s): Richmond					
6EP30-*	3,14,16	42	0.93	30	4.5
6ES30-*	1,3,16	42	0.93	30	4.5
6EM30-*	1,3,16	44	0.93	30	4.5
6ES40-*	1,3,16	45	0.92	38	4.5
T2V30-2	3,14,16	46	0.93	30	4.5
6E30-*	1,3,14,16	48	0.93	30	4.5
T2V40-2	3,14,16	50	0.93	40	4.5
6EM40-*	1,14,16	53	0.92	40	4.5
6ES50-*	1,3,6	55	0.91	47	4.5
9EMR40-*	1,14,16	56	0.93	40	4.5
RMEM*R40-*TI	1,3,5,6	56	0.93	40	4.5
EMR40-	1,3,14,16	56	0.94	40	4.5
RMEM*R50-*	1,5,6	60	0.91	50	4.5
RMEM*R50-*TI	1,3,5,6	60	0.92	50	4.5
8V50-2T---D	1,3,5,6	61	0.91	50	4.5
6EM50-*	1,16	62	0.90	50	4.5
9EMR50-*	1,14,16	62	0.92	50	4.5
EMR50-	1,3,14,16	62	0.93	50	4.5
6E50-*	1,14,16	67	0.91	50	4.5
9ER50-*	1,14,16	67	0.93	50	4.5
RME*R50-*TI	1,3,5,6	67	0.93	50	4.5
ER50-	1,3,14,16	67	0.94	50	4.5
6E65-*	1,14,16	71	0.89	65	4.5
RME*R65-*	5,6	71	0.90	65	4.5
9ER66-*	1,14,16	71	0.91	65	4.5
RME*R65-*TI	1,3,5,6	71	0.91	65	4.5
ER66-	1,3,14,16	71	0.92	65	4.5
6E80-*	1,14,16	87	0.86	80	4.5
RME*R80-*	5,6	88	0.88	80	4.5
9ER80-*	1,14,16	88	0.90	80	4.5
RME*R80-*TI	1,3,5,6	88	0.91	80	4.5
ER80-	1,3,14,16	88	0.92	80	4.5
8V80-2T A	1,5,6	92	0.86	80	4.5
6E120-2	1	99	0.85	119	4.5
8V120-2 B	5,6	110	0.81	119	4.5
8V120-2T B	1,5,6	110	0.85	119	4.5
Discontinued Models					
✠6E40-*	1,16	57	0.92	40	4.5
Trade Name(s): Richmond Light Duty Electric					
TEGSP30-B	3,14,16	42	0.93	30	4.5
TELDS30-B	1,3,16	42	0.93	30	4.5
TELDS40-B	1,3,16	45	0.92	38	4.5
TELD30-B	1,3,14,16	48	0.93	30	4.5
TELDS52-B	1,3	55	0.91	47	4.5
TELD40-B	1,3,14,16	56	0.94	40	4.5
TELD52-B	1,3,14,16	67	0.94	50	4.5
TELD66		71	0.90	65	4.5
TELD66-B	1,3,14,16	71	0.92	65	4.5
TELD80		88	0.88	80	4.5
TELD80-B	1,3,14,16	88	0.92	80	4.5
TELD120-B	1	99	0.85	119	4.5
TELD120		110	0.81	119	4.5

Additional Footnotes

3. Pipe insulation.
5. The first "*" denotes the warranty period and may be replaced by the following letters: V, I, K, or X.
6. The second "*" denotes the single or double element model and may be replaced by the following numbers: 1 or 2.
14. * in the model number denotes warranty and may be replaced: I, -, V, or X.
16. * as a suffix or preceding -A; may be replaced by: 1, 2, AAG, AAH, KAG, KAH, MAG, MAH, TAG, TAH, SAG, or SAH.

RUUD WATER HEATER DIVISION

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
Trade Name(s): Professional					
RUES PRO30-*-A	1,3,16	42	0.93	30	4.5
RUEM PRO30-*-A	1,3,16	44	0.93	30	4.5
RUES PRO40-*-A	1,3,16	45	0.92	38	4.5
RUEPRO40-*T	1,3,5	56	0.93	40	4.5
RUE PRO40-*-A	1,3,14,16	56	0.94	40	4.5
RUEMPRO52-*	1,5	60	0.92	50	4.5
RUEPRO52-*	3,5	61	0.92	50	4.5
RUEM PRO52-*-A	1,3,14,16	62	0.93	50	4.5
RUEPRO52-*T	1,3,5	67	0.93	50	4.5
RUE PRO52-*-A	1,3,14,16	67	0.94	50	4.5
RUEPRO66-*	3,5	71	0.91	65	4.5
RUEPRO66-*T	1,3,5	71	0.91	65	4.5
RUE PRO66-*-A	1,3,14,16	71	0.92	65	4.5
RUEPRO80-*	3,5	88	0.90	80	4.5
RUEPRO80-*T	1,3,5	88	0.91	80	4.5
RUE PRO80-*-A	1,3,14,16	88	0.92	80	4.5
Discontinued Models					
✠RUEH PRO40-*-A	1,16	57	0.92	40	4.5
Trade Name(s): Ruud					
PE2S-30-*	1,3,16	42	0.93	30	4.5
PEP30-*	3,14,16	42	0.93	30	4.5
PE2M-30-*	1,3,16	44	0.93	30	4.5
PE2S-40-*	1,3,16	45	0.92	38	4.5
PE2-30-*	1,3,14,16	48	0.93	30	4.5
PE2-40-*	1,14,16	53	0.92	40	4.5
PE2S50-*	1,3,6	55	0.91	47	4.5
E*R40-*T	1,3,8,9	56	0.93	40	4.5
E3R-40-	1,3,14,16	56	0.94	40	4.5
EM*R52-*	1,8,9	60	0.92	50	4.5
*E52-*T D	1,8,9	61	0.91	50	4.5
E*R52-*	3,8,9	61	0.92	50	4.5
PE2M-52-*	1,16	62	0.90	50	4.5
PE3MR-52-*	1,3,14,16	62	0.93	50	4.5
PE2-52-*	1,14,16	67	0.91	50	4.5
E*R52-*T	1,3,8,9	67	0.93	50	4.5
E3R-52-	1,3,14,16	67	0.94	50	4.5
*E66-*T B	1,8,9	71	0.89	65	4.5
PE2-66-*	1,14,16	71	0.89	65	4.5
E*R66-*	3,8,9	71	0.91	65	4.5
E*R66-*T	1,3,8,9	71	0.91	65	4.5
E3R-66-	1,3,14,16	71	0.92	65	4.5
PE2-80-*	1,14,16	87	0.86	80	4.5
E*R80-*	3,8,9	88	0.90	80	4.5
E*R80-*T	1,3,8,9	88	0.91	80	4.5
E3R-80-	1,3,14,16	88	0.92	80	4.5
*E80-*T A	1,8,9	92	0.86	80	4.5
PE2-120-2	1	99	0.85	119	4.5
E120- B	8,9	110	0.81	119	4.5
*E120-*T B	1,8,9	110	0.85	119	4.5
Discontinued Models					
✠PE2H-40-*	1,16	57	0.92	40	4.5

Additional Footnotes

STANDARD FOOTNOTES:
1. Heat Traps
2. Manufactured (Mobile) Home Model
Rating Voluntarily Revised Since Last Directory
✠ Rating Revised By Program Since Last Directory

3. Pipe insulation.
5. The "*" denotes the single or double element model and may be replaced by the following numbers: 1 or 2.
6. The "*" denotes the single or double element model and may be replaced by the following numbers: 1 or 2.
8. The first "*" denotes the warranty period and may be replaced by the following letters: M, P, V, or X.
9. The second "*" denotes the single or double element model and may be replaced by the following numbers: 1 or 2.
14. * in the model number denotes warranty and may be replaced: I, -, V, or X.
16. * as a suffix or preceding -A; may be replaced by: 1, 2, AAG, AAH, KAG, KAH, MAG, MAH, TAG, TAH, SAG, or SAH.

SEARS, ROEBUCK AND COMPANY

Trade Name(s): Kenmore

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
153.320392 HT	1	47	0.93	30	3.8
153.320393 HT	1	47	0.93	30	3.8
153.320492 HT	1	56	0.93	40	3.8
153.320493 HT	1	56	0.93	40	3.8
153.321512 HT	1	64	0.92	50	3.8
153.321513 HT	1	64	0.92	50	3.8
153.320592 HT	1	64	0.93	50	3.8
153.320593 HT	1	64	0.93	50	3.8
153.320692 HT	1	78	0.91	66	3.8
153.320693 HT	1	78	0.91	66	3.8
153.320892 HT	1	90	0.91	80	3.8
153.320893 HT	1	90	0.91	80	3.8

Trade Name(s): Sears

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
153.326160	1	30	0.93	30	3.8
153.316330	1,14,17	33	0.93	30	1.7
153.326330	4	35	0.93	30	2.0
153.313140	1	38	0.93	30	3.8
153.313340	1,14	38	0.93	30	3.8
153.326161	1	38	0.93	30	3.8
153.326360	1	40	0.93	30	3.8
153.326361	1	40	0.93	30	3.8
✠153.318031	1	42	0.91	27	4.5
# 153.321340	1,4	44	0.95	30	3.8
# 153.321341	1,4	44	0.95	30	3.8
# 153.329360	1,4	44	0.95	30	3.8
# 153.329361	1,4	44	0.95	30	3.8
153.313240	1	45	0.92	40	3.8
153.326260	1	45	0.92	40	3.8
153.326261	1	45	0.92	40	3.8
153.329262	1,4	45	0.93	38	3.8
153.313242	1,9	48	0.92	38	4.5
153.326262	1,9	48	0.92	38	4.5
153.326263	1,9	48	0.92	38	4.5
153.313442	1,14	49	0.92	40	3.8
153.326460		49	0.92	40	3.8
153.326461		49	0.92	40	3.8
153.326760	1	49	0.92	40	3.8
153.326761	1	49	0.92	40	3.8
153.329460	1,4	51	0.93	40	3.8
153.329461	1,4	51	0.93	40	3.8
153.318131 HT	1	52	0.88	40	4.5
153.326860	1	52	0.91	50	3.8
153.326861	1	52	0.91	50	3.8
153.321440	1,4	53	0.95	40	3.8
153.321441	1,4	53	0.95	40	3.8
153.313640		59	0.93	50	3.8
153.326660	1	59	0.93	50	3.8
153.326661	1	59	0.93	50	3.8
153.329560	1,4	59	0.93	55	3.8
153.329561	1,4	59	0.93	55	3.8
153.326560		64	0.90	55	3.8
153.326561		64	0.90	55	3.8
153.321540	1,4	64	0.95	55	3.8
153.321541	1,4	64	0.95	55	3.8
153.321640	1,4	69	0.95	66	3.8
153.321641	1,4	69	0.95	66	3.8
# 153.329660	1,4	73	0.92	66	3.8
# 153.329661	1,4	73	0.92	66	3.8
153.321840	1,4	78	0.95	80	3.8
153.321841	1,4	78	0.95	80	3.8
# 153.329860	1,4	84	0.93	80	3.8
# 153.329861	1,4	84	0.93	80	3.8

Additional Footnotes

4. Insulation supplied for Inlet & Outlet connections.
9. Insulation supplied for Inlet & Outlet connections.
14. Insulation supplied for Inlet & Outlet connections.
17. D may be replaced by S to note element usage.

A.O. SMITH WATER PRODUCTS CO.

Trade Name(s): A.O. Smith

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
ECJ-30	1	37	0.93	30	4.5
ECL-30	1,9	41	0.93	30	4.5
ECJ-40	1	43	0.92	40	4.5
ECS-30	1,9	43	0.93	30	4.5
ECT-30	1,9	43	0.93	30	4.5
ESM-30	2,9	43	0.93	30	3.8
ECJN 40	1,9	48	0.92	38	4.5
ECLN 40	1,9	48	0.92	38	4.5
PCLN 40	1,9	48	0.92	38	4.5
ESM-40	2,9	51	0.93	40	3.8
ECS-40	1,9	52	0.92	40	4.5
ECT-40	9	52	0.92	40	4.5
PXHS-40	1	52	0.95	40	4.5
ECRT-40	1,9	54	0.93	40	4.5
ECL-50	1,9	55	0.91	50	4.5
PXHT-40	1,9	56	0.95	40	4.5
ESM-50	2,9	58	0.95	50	3.8
# ECT-52	9	60	0.91	50	4.5
ECRT-52	1,9	60	0.93	50	4.5
PXHT-52	1,9	60	0.95	50	4.5
ECS-50	1,9	62	0.90	50	4.5
ECRS-50	1,9	62	0.93	50	4.5
PXHS-50	1	62	0.95	50	4.5
# ECT-55	9	67	0.90	55	4.5
ECT-66	9	72	0.88	66	4.5
PXHT-66	1,9	72	0.95	66	4.5
ECRT-66	1,9	76	0.92	66	4.5
ECT-80	9	81	0.86	80	4.5
PXHT-80	1,9	81	0.95	80	4.5
ECRT-80	1,9	87	0.93	80	4.5
ECT-120	9	112	0.81	119	4.5
Discontinued Models					
ECL-40	1,9	48	0.92	40	4.5

Trade Name(s): A.O. Smith, Glascote, National, Perma-Glas

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
✠ESTT 30 110		42	0.89	27	4.5
✠ESTT 30T 110	1	42	0.91	27	4.5
ESTT 40T 110	1	52	0.88	40	4.5

Additional Footnotes

9. Insulation supplied for Inlet & Outlet connections.

STATE INDUSTRIES, INC.

Trade Name(s): Freedom

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
** 50 DLRS	1,14	66	0.95	50	5.5
# ** 50 DLRT	1,14	70	0.95	55	5.5
# **50 DART	1,14	70	0.95	55	5.5
** 80 DLRT	1,14	86	0.95	80	5.5
**80 DART	1,14	86	0.95	80	5.5

Trade Name(s): State

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
ES6 30 DOMS	1	37	0.93	30	4.5
IN1 30 DORTE3	1	40	0.93	30	3.8

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model
Rating Voluntarily Revised Since Last Directory
✠ Rating Revised By Program Since Last Directory

STATE INDUSTRIES, INC.

Trade Name(s): State

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
IN1 30 SORTE3	1	40	0.93	30	3.8
ES6 30 DOLS	1,9	41	0.93	30	4.5
ESX 30 DOLS	1,9	41	0.93	30	4.5
IN1 30 DOLS*	1,9	41	0.93	30	4.5
✠P630 2OT1		42	0.89	27	4.5
✠P630 2OT1***W	1	42	0.91	27	4.5
ES6 40 DOMS	1	43	0.92	40	4.5
ES6 30 DORS	1,9	43	0.93	30	4.5
ES6 30 DORT	1,9	43	0.93	30	4.5
ESX 30 DORS	1,9	43	0.93	30	4.5
ESX 30 DORT	1,9	43	0.93	30	4.5
IN1 30 DHMSE3	2,9	43	0.93	30	3.8
IN1 30 DHMSE4	2,9	43	0.93	30	3.8
IN1 30 DORTE4	1,9	43	0.93	30	4.5
IN1 30 SHMSE3	2,9	43	0.93	30	3.8
IN1 30 SHMSE4	2,9	43	0.93	30	3.8
IN1 30 SORTE4	1,9	43	0.93	30	4.5
SC1 30 DHMS*	2,9	43	0.93	30	3.8
SCV 30 DHMS	2,9	43	0.93	30	3.8
ES6 40 DOLNS	1,9	48	0.92	38	4.5
ES6 40 DOMNS	1,9	48	0.92	38	4.5
ESX 40 DOLNS*	1,9	48	0.92	38	4.5
IN1 40 DOLNS*	1,9	48	0.92	38	4.5
ES**40 DOLS	1,9	48	0.92	40	4.5
IN1 40 SORTE3		49	0.92	40	3.8
IN1 40DORTE3		49	0.92	40	3.8
IN1 40 DHMSE3	2,9	51	0.93	40	3.8
IN1 40 DHMSE4	2,9	51	0.93	40	3.8
IN1 40 SHMSE3	2,9	51	0.93	40	3.8
IN1 40 SHMSE4	2,9	51	0.93	40	3.8
IN1 52 DHMTE3	2,9	51	0.93	40	3.8
SC1 40 DHMS*	2,9	51	0.93	40	3.8
SCV 40 DHMS	2,9	51	0.93	40	3.8
SCV 52 DHMT	2,9	51	0.93	40	3.8
P640 2OT4***W	1	52	0.88	40	4.5
ES6 40 DORS	1,9	52	0.92	40	4.5
ES6 40 DORT	9	52	0.92	40	4.5
ESX 40 DORS	1,9	52	0.92	40	4.5
ESX 40 DORT	9	52	0.92	40	4.5
IN1 40 DORTE4	9	52	0.92	40	4.5
IN1 40 SORTE4	9	52	0.92	40	4.5
EPX 40 DXRS	1	52	0.95	40	4.5
ES6 40 DOCT	1,9	54	0.93	40	4.5
ESX 40 DOCT	1,9	54	0.93	40	4.5
ES6 50 DOLS	1,9	55	0.91	50	4.5
ESX 50 DOLS	1,9	55	0.91	50	4.5
IN1 50 DOLS*	1,9	55	0.91	50	4.5
EPX 40 DXRT	1,9	56	0.95	40	4.5
# IN1 52 DORTE3	1,7	57	0.91	50	3.8
# IN1 52 SORTE3	1,7	57	0.91	50	3.8
IN1 50 DHMT	2,11	58	0.92	50	3.8
SCV 50 DHMT	2,11	58	0.92	50	3.8
IN1 52 DHMTE4	2,9	58	0.95	50	3.8
IN1 52 SHMTE3	2,9	58	0.95	50	3.8
IN1 52 SHMTE4	2,9	58	0.95	50	3.8
SC1 52 DHMT*	2,9	58	0.95	50	3.8
# ES6 52 DORT	9	60	0.91	50	4.5
# ESX 52 DORT	9	60	0.91	50	4.5
# IN1 52 DORTE4	9	60	0.91	50	4.5
# IN1 52 DORTE5	9	60	0.91	50	4.5
# IN1 52 SORTE4	9	60	0.91	50	4.5
# IN6 52 DORTE4	9	60	0.91	50	4.5
# IN6 52 DORTE5	9	60	0.91	50	4.5
# SCI 52 SORT*	9	60	0.91	50	4.5
ES6 52 DOCT	1,9	60	0.93	50	4.5
ESX 52 DOCT	1,9	60	0.93	50	4.5
EPX 52 DXRT	1,9	60	0.95	50	4.5
ES6 50 DORS	1,9	62	0.90	50	4.5
ESX 50 DORS	1,9	62	0.90	50	4.5
ES6 50 DOCS	1,9	62	0.93	50	4.5
ESX 50 DOCS	1,9	62	0.93	50	4.5
EPX 50 DXRS	1	62	0.95	50	4.5
# ES6 55 DORT	9	67	0.90	55	4.5
# ESX 55 DORT	9	67	0.90	55	4.5
ES6 66 DORT	9	72	0.88	66	4.5
ESX 66 DORT	9	72	0.88	66	4.5
IN1 66 DORTE4	9	72	0.88	66	4.5
IN1 66 DORTE5	9	72	0.88	66	4.5
EPX 66 DXRT	1,9	72	0.95	66	4.5
ES6 66 DOCT	1,9	76	0.92	66	4.5
ESX 66 DOCT	1,9	76	0.92	66	4.5
ES6 80 DORT	9	81	0.86	80	4.5
ESX 80 DORT	9	81	0.86	80	4.5
EPX 80 DXRT	1,9	81	0.95	80	4.5
ES6 80 DOCT	1,9	87	0.93	80	4.5
ESX 80 DOCT	1,9	87	0.93	80	4.5
ES6 120 DORT	9	112	0.81	119	4.5
ESX 120 DORT	9	112	0.81	119	4.5
Discontinued Models					
ECJN 40	1,9	48	0.92	38	4.5
PCLN 40	1,9	48	0.92	38	4.5
ES**40 DOLS	1,9	48	0.92	40	4.5
P** 52 2ORT*** 2W	1,4,6,7	62	0.90	50	4.5
P** 52 2ORTGJ	1,4,6,7	62	0.90	50	4.5
P** 52 2ORTGJW	1,4,6,7	62	0.90	50	4.5
T6522JRT2W	4,6,7	62	0.90	52	4.5
P**522OCTJW***	1,4,6,7	64	0.90	50	4.5
P**662OCTJW***	1,4,6,7	78	0.91	66	4.5
P**822OCTJW***	1,4,6,7	90	0.87	80	4.5
P** 120 2ORT*** W	1,4,6,7	117	0.82	119	4.5

Additional Footnotes

4. (**) indicates 1 through 15 or X for warranty.
6. All models may have one or more of the following suffixes: B, E, G, J, K, M, NC, R, V, W, X, or Y.
7. First digit of suffix may be replaced by 1 to denote a single element model.
9. Insulation supplied for Inlet & Outlet connections.
11. Insulation supplied for Inlet and Outlet connections.
14. Insulation supplied for Inlet & Outlet connections.

U.S. CRAFTMASTER WATER HEATERS

Trade Name(s): Craftmaster, Envirotemp, Pro-Line, Pro-Line Plus, U.S. Craftmaster, Whirlpool

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
E2*30L*******	1,4,5,6,10	40	0.93	28	4.5
E2*30H*******	1,4,5,6,10	43	0.93	30	4.5
E2*30H****H***	1,4,5,6,10	43	0.93	30	4.5
E2*38T*******	1,5,6,10	45	0.88	38	4.5
E1*40L*******	1,4,5,6,10	45	0.92	38	4.5
E2*40L*******	1,4,5,6,10	45	0.92	38	4.5
E2*40H*******	1,4,5,6,10	50	0.92	40	4.5
E3*40H*******	1,4,5,6,10	50	0.92	40	4.5
EE2*40H*******	1,4,5,6,10	50	0.92	40	4.5
EE3*40H*******	1,4,5,6,10	50	0.92	40	4.5
E1*50L*******	1,4,5,6,10	52	0.91	47	4.5
E2*50L*******	1,4,5,6,10	52	0.91	47	4.5
E2*40R*******	1,4,5,6,10	54	0.92	40	4.5
E3*40R****H***	1,4,5,6,10	54	0.92	40	4.5
EE2*40R*******	1,4,5,6,10	54	0.92	40	4.5
EE3*40R*******	1,4,5,6,10	54	0.95	40	4.5
EE2*50H*******	1,4,5,6,10	55	0.92	50	4.5
EE3*50H*******	1,4,5,6,10	55	0.93	50	4.5
E1*50R*******	1,4,5,6,10	58	0.90	50	4.5
E2*50R*********	1,4,5,6,10	58	0.91	50	4.5
EE2*-50R*******	1,4,5,6,10	58	0.92	50	4.5
E3*50R****C***	1,4,5,6,10	58	0.93	50	4.5

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model

\# Rating Voluntarily Revised Since Last Directory

✠ Rating Revised By Program Since Last Directory

U.S. CRAFTMASTER WATER HEATERS

Trade Name(s): Craftmaster, Envirotemp, Pro-Line, Pro-Line Plus, U.S. Craftmaster, Whirlpool

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
EE3*50R*******	1,4,5,6,10	58	0.95	50	4.5
E2*50H*******	1,4,5,6,10	68	0.91	50	4.5
E3*50H****O***	1,5,6,10	68	0.93	50	4.5
E2*65H*******	1,4,5,6,10	73	0.90	66	4.5
EE2*65H*******	1,4,5,6,10	73	0.90	66	4.5
E3*65H****C***	1,4,5,6,10	73	0.91	66	4.5
EE3*65H*******	1,4,5,6,10	73	0.92	66	4.5
*E2*80H*******	1,4,5,6,9,10	89	0.87	80	4.5
EE2*80H*******	1,4,5,6,10	89	0.90	80	4.5
E3*80H****C***	1,4,5,6,10	89	0.91	80	4.5
EE3*80H*******	1,4,5,6,10	89	0.92	80	4.5
*E2*119R****C***	1,4,5,6,9,10	115	0.83	119	4.5

Additional Footnotes

4. First asterisk after first number in model number may be replaced with any letter (A, E, F,H, J, or Z) signifying warranty period.
5. First asterisk after model number may have "D" or "S".
6. May have any combination of the following suffixes: M, V, or X.
9. May have prefix "S".
10. Second through fourth asterisks after model number are total wattage

VAUGHN MANUFACTURING CORP.

Trade Name(s): Sepco, Hydrohot, D.W. Whitehead

Model Number	Footnotes	1st Hr Rating Gals.	Energy Factor	Rated Storage Vol. Gals.	Input kWh
M-40	1,3	54	0.92	40	4.5
M-50PS	1,3	61	0.90	50	4.5
M-50	1,3	61	0.92	50	4.5
S-50	1,3	61	0.92	50	4.5
M-60	1,3	68	0.90	60	4.5
S-65	1,3	68	0.90	65	4.5
S-70	1,3	76	0.88	70	4.5
M-80PS	1,3	82	0.90	80	4.5
S-80	1,3	82	0.90	80	4.5
M-80	1,3	82	0.91	80	4.5
S-100T	1,3	101	0.86	100	4.5
M-100TPS	1,3	101	0.90	100	4.5
S-120	1,3	120	0.86	120	4.5
Discontinued Models					
✠S-60	1,3	68	0.89	60	4.5

Additional Footnotes

3. May have suffix "PJ".

STANDARD FOOTNOTES:

1. Heat Traps
2. Manufactured (Mobile) Home Model

Rating Voluntarily Revised Since Last Directory

✠ Rating Revised By Program Since Last Directory