DATA SHEET

What you need to know when selecting an Electric Tankless Water Heater



SIZING GUIDE

Simple Formula Ensures Proper Size of Eemax Tankless Electric Water Heater

A tankless water heater creates hot water on demand. You need a proportional amount of energy or (kW) to heat the flow or (GPM) you need for your application. The chart below will help you determine the correct electric tankless water heater, based on flow rate (GPM) and temperature rise.

FLOW CHART POWER REQUIRED – KW

TOTAL GALLONS PER MINUTE (GPM) DEMAND

28	82 kW	123 kW								
27	79 kW	119 kW								
26	76 kW	114 kW								
25	73 kW	110 kW								
24	70 kW	105 kW								
23	67 kW	101 kW								
22	64 kW	97 kW	129 kW							
21	62 kW	92 kW	123 kW							
20	59 kW	88 kW	117 kW							
19	56 kW	84 kW	111 kW							
18	53 kW	79 kW	105 kW	132 kW						
17	50 kW	75 kW	100 kW	125 kW						
16	47 kW	70 kW	94 kW	117 kW						
15	44 kW	66 kW	88 kW	110 kW	132 kW					
14	41 kW	62 kW	82 kW	103 kW	123 kW					
13	38 kW	57 kW	76 kW	95 kW	114 kW					
12	35 kW	53 kW	70 kW	88 kW	105 kW	123 kW				
11	32 kW	48 kW	64 kW	81 kW	97 kW	113 kW	129 kW			
10	29 kW	44 kW	59 kW	73 kW	88 kW	103 kW	117 kW	132 kW		
9	26 kW	40 kW	53 kW	66 kW	79 kW	92 kW	105 kW	119 kW	132 kW	
8	23kW	35 kW	50 kW	59 kW	70 kW	82 kW	94 kW	105 kW	117 kW	129 kW
7	20 kW	31 kW	41 kW	51 kW	62 kW	72 kW	82 kW	92 kW	103 kW	113 kW
6	18 kW	26 kW	35 kW	44 kW	53 kW	62 kW	70 kW	79 kW	88 kW	97 kW
5	15 kW	22 kW	29 kW	37 kW	44 kW	51 kW	59 kW	66 kW	73 kW	81 kW
4	12 kW	18 kW	23 kW	29 kW	35 kW	41 kW	47 kW	53 kW	59 kW	64 kW
3	9 kW	13 kW	18 kW	22 kW	26 kW	31 kW	35 kW	40 kW	44 kW	48 kW
2	6 kW	9 kW	12 kW	15 kW	18 kW	21 kW	23 kW	26 kW	29 kW	32 kW
1	3 kW	4 kW	6 kW	7 kW	9 kW	10 kW	12 kW	13 kW	15 kW	16 kW
0.5	2 kW	2 kW	3 kW	4 kW	4 kW	5 kW	6 kW	7 kW	7 kW	8 kW
	20°F	**30°F**	**40°F**	**50°F**	**60°F**	**70°F**	**80°F**	**90°F**	**100°F**	**110°F**

RISE IN TEMPERATURE °F

FORMULAS

$$\text{Flow Rate (GPM)} = \frac{\text{kW rating x 6.83}}{\text{rise in temp (°F)}}$$

$$\text{Rise in Temp (°F)} = \frac{\text{kW rating x 6.83}}{\text{flow rate}}$$

$$\text{kW Rating} = \frac{\text{GPM x rise in temp}}{6.83}$$

For additional product specifying needs, contact Eemax Support at (800) 543-6163 or email info@eemaxinc.com.

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TYPICAL GPM REQUIREMENTS FOR VARIOUS FIXTURES:

- **HAND WASHING SINK = 0.5 GPM**
- **COMMERCIAL LAVATORY SINK = 0.5 GPM**
- **RESIDENTIAL KITCHEN SINK = 2.0 GPM**
- **MULTI-COMPARTMENT WASH SINK = 2.5 – 3.0 GPM**
- **RESIDENTIAL DISHWASHER = 1.0 – 2.0 GPM**
- **COMMERCIAL JANITORS SINK = 2.0 – 4.0 GPM**
- **SHOWER = 2.0 – 2.5 GPM (per shower head)**
- **WASHING MACHINE = 1.0 – 1.5 GPM**

Average GPM figures based on 2010 plumbing standards.

PROPER SIZING EXAMPLE:

Let's size an Eemax **Electric Tankless Water Heater** for a bathroom in a new addition for a home. The goal is to provide hot water for a full bathroom with one sink and a standard shower. The application would be point-of-use with only cold water lines running to the addition. The first thing to know is the gallons per minute (GPM) demand on the heater (all flow volumes are estimates, fixtures GPMs may vary):

Bathroom Lavatory Sink =	**0.5 GPM**
Standard Shower =	**2 to 2.5 GPM**
Total GPM Demand =	**3 GPM (running at the same time)**

The result of "Total GPM Demand" equals the number on the left column of the **Flow Chart Power Required** guide on the reverse side of this sheet. In this case, 3 GPM is the result. If the result is a mixed number, we suggest rounding up to the nearest whole number.

Next, it's time to figure out how much heat is needed for the lavatory sink and shower (typical desired showering temperature is 110°F). Now, determine the average incoming water temperature keeping the cold winter months in mind. Subtract COLD WATER temperature (Example 58°F) from the 110°F. The result equals 52°F of TEMPERATURE RISE needed. For Flow Chart purposes, it is recommended to round this number to 50°F.

Now, use the bottom row of numbers on the **Flow Chart Power Required** guide and search for 50°F. Then read UP from the bottom row to the intersection of 3 GPM from the left column. Based on the above example and information from the chart, the required kilowatt (kW) of power needed is 22. This means, a 22kW Electric Tankless Water Heater is needed for the application.

The next step would be selecting the proper Eemax heater that best fits the application and one that provides enough kW of at least 22. As an example for this specific application, the Eemax SS023240TC would be best suited for the single sink and a standard shower with an incoming average water temperature of 58°F.

To find the proper water heater per the requirements, please reference **Eemax.com** or refer to the **Eemax Quick Reference Product Spec Guide.**

SPECIAL MODEL OPTIONS:

EE =	**Emergency Eyewash –** Meets ANSI tepid water requirements.
ML =	**Multi-Lav –** Factory preset to 110°F with 0.3 GPM turn-on.
S =	**Sanitation –** Factory preset not to exceed 180°F.
FS =	**Factory Set –** Customer specified factory-set not to exceed temperature ambient to 180°F.
SL =	**Single Lav –** 3/8" compression fittings standard. Available on EX non-thermostatic models only.
DL =	**Dual Lav. –** (2) 0.5 GPM aerators supplied as standard.
T3 =	**Thermostatic (parallel turn on) Activates 1.8 GPM, Max Flow 5 GPM.**
T4 =	**Thermostatic (parallel turn on) Activates 2.6 GPM, Max Flow 8 GPM.**
T2T =	**Thermostatic (staged turn on) Activates 0.7 GPM, Max Flow 4 GPM.**
T2T2 =	**Thermostatic (staged turn on) Activates 0.9 GPM, Max Flow 6 GPM.**
NEMA 4 =	**Optional Waterproof Cabinet –** Hinged cover. Powder coated finish.
NEMA 4x =	**Optional Waterproof Corrosion-Resistant Cabinet –** Stainless steel.

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