



# Water Heater Efficiency Guide

These tables list the minimum uniform energy factors required by federal regulations for some of the most common types and sizes of water heaters.

Consumer Gas-Fired Instantaneous (> 50,000 Btu/h, ≤ 200,000 Btu/h) - Minimum UEF				
Volume (gallons)	Max Rating 0 ≤ GPM < 1.7	Max Rating 1.7 ≤ GPM < 2.8	Max Rating 2.8 ≤ GPM < 4.0	Max Rating GPM ≥ 4.0
≤ 2	0.80	0.81	0.81	0.81

Consumer Gas-Fired Storage (≤ 75,000 Btu/h) - Minimum UEF				
Volume (gallons)	0 ≤ FHR < 18	18 ≤ FHR < 51	51 ≤ FHR < 75	FHR ≥ 75
30	0.29	0.54	0.60	0.65
40	0.27	0.52	0.58	0.64
50	0.25	0.50	0.56	0.63
55	0.24	0.49	0.55	0.62
60	0.61	0.74	0.77	0.79
75	0.60	0.73	0.76	0.78
80	0.60	0.73	0.76	0.78

Residential-Duty Commercial Gas-Fired Storage (> 75,000 Btu/h, ≤ 105,000 Btu/h) - Minimum UEF				
Volume (gallons)	0 ≤ FHR < 18	18 ≤ FHR < 51	51 ≤ FHR < 75	FHR ≥ 75
50	0.22	0.48	0.55	0.61
60	0.21	0.46	0.53	0.61
75	0.2	0.45	0.52	0.59
80	0.2	0.44	0.51	0.59

Consumer Electric Instantaneous (≤ 12 kW) - Minimum UEF				
Volume (gallons)	Max Rating 0 ≤ GPM < 1.7	Max Rating 1.7 ≤ GPM < 2.8	Max Rating 2.8 ≤ GPM < 4.0	Max Rating GPM ≥ 4.0
≤ 2	0.91	0.91	0.91	0.92

Residential-Duty Commercial Electric Instantaneous (> 12 kW, ≤ 58.6 kW) - Minimum UEF				
Volume (gallons)	Max Rating 0 ≤ GPM < 1.7	Max Rating 1.7 ≤ GPM < 2.8	Max Rating 2.8 ≤ GPM < 4.0	Max Rating GPM ≥ 4.0
≤ 2	0.80	0.80	0.80	0.80

**Btu/h** British thermal units per hour     
 **kW** Kilowatt     
 **GPM** Gallons Per Minute     
 **FHR** First Hour Rating     
 **UEF** Uniform Energy Factor

## Consumer Electric Storage - Minimum UEF

Volume (gallons)	$0 \leq \text{FHR} < 18$	$18 \leq \text{FHR} < 51$	$51 \leq \text{FHR} < 75$	$\text{FHR} \geq 75$
30	0.86	0.92	0.92	0.93
40	0.85	0.91	0.92	0.93
50	0.84	0.91	0.92	0.93
55	0.84	0.91	0.92	0.93
60	1.86	1.98	2.05	2.18
75	1.84	1.96	2.03	2.16
80	1.84	1.96	2.03	2.15

## Tabletop - Minimum UEF

Volume (gallons)	Max Rating $0 \leq \text{GPM} < 1.7$	Max Rating $1.7 \leq \text{GPM} < 2.8$	Max Rating $2.8 \leq \text{GPM} < 4.0$	Max Rating $\text{GPM} \geq 4.0$
30	0.46	0.83	0.89	0.94
40	0.40	0.79	0.87	0.92

Heat pump water heaters that meet the UEFs listed in the Water Heater Replacements table may be used to replace existing water heaters. This applies only to prescriptive alterations to single dwelling units. The UEF depends on the climate zone where the water heater will be installed. The water heater being replaced can be of any fuel type – natural gas, propane, or electric.

Northwest Energy Efficiency Alliance (NEEA) Tier 3 or higher heat pump water heaters may be installed as described above in climate zones 1-15. If these water heaters are installed in climate zone 16, the solar water heating requirements described in the table must be met.

Per **Section 150.2(b)1Giid**, the California Energy Commission used the performance compliance approach to determine the minimum UEF needed to be able to prescriptively replace an existing water heater with a heat pump water heater. These heat pump water heaters have been precalculated to comply with the prescriptive water heating alteration requirements when serving a single dwelling unit, with or without natural gas connection. These are only a few of many possible combinations that will comply using the performance compliance approach.

## Water Heater Replacements (New Heat Pump Water Heater)

Climate Zone	Minimum UEF
1	2.82
2	2.82
3	2.82
4	2.87
5	2.82
6	2.47
7	2.61
8	2.47
9	2.47
10	2.47
11	2.61
12	2.87
13	2.61
14	2.61
15	2.47
16	$\geq 3$ , plus a solar water heating system with solar saving fraction $\geq 0.4$

**Can't find your water heater type or volume?**

**Contact the Energy Standards Hotline at:**

(800) 772-3300 (inside California)

(916) 654-5106 (outside California)

[title24@energy.ca.gov](mailto:title24@energy.ca.gov)