



# Residential Electric Element Availability Sheet

## KW INPUT AVAILABILITY

Residential electric water heaters are shipped with the standard voltage and kW inputs shown unless otherwise specified when ordering. This table below shows available inputs (in kW) for residential electric water heaters.

Models & elements	Voltage	Wiring	kW Input Available													
6-Gallon Models Single-Element	120V	-		1.5	1.65	2	2.5	*3								
	208V	-	1	1.5		2	2.5	*3								
	240V	-	*1	1.5		2	2.5	3								
	277V	-		*1.5		2	2.5	*3								
	480V	-				2	2.5	*3								
10-Gallon through 20-Gallon Models Single-Element	120V	-		1.5	1.65	2	2.5	3								
	208V	-	1	1.5		2	2.5	3	3.5	3.8	4	4.5	*5	5.5		
	240V	-	*1	1.5		2	2.5	3	3.5	3.8	*4	4.5	5	5.5	6	
	277V	-		1.5		2	2.5	3			4	4.5	*5		*6	
	480V	-				2	2.5	3			*4	4.5	*5	*5.5	*6	
40-gallon Tall Model (Minimum 3500W)	120V	Interlock														
		Simultaneous				4	5									
	208V	Interlock								3.5	3.8	4	4.5	*5	5.5	
		Simultaneous				4	5	6	7	7.6	8	9	*10			
	240V	Interlock								3.5	3.8	*4	4.5	5	5.5	6
		Simultaneous				4	5	6	7	7.6	*8	9	10	11		
	277V	Interlock										4	4.5	*5		*6
		Simultaneous				4	5	6				8	9	*10		*12
480V	Interlock										*4	4.5	*5	*5.5	*6	
	Simultaneous				4	5	6				*8	9	*10	*11	*12	
50/48 Gallon Lowboy Models (Minimum 4000W)	120V	Interlock														
		Simultaneous				4	5									
	208V	Interlock										4	4.5	5	5.5	
		Simultaneous				4	5	6	7	7.6	8	9	10			
	240V	Interlock										4	4.5	5	5.5	6
		Simultaneous				4	5	6	7	7.6	8	9	10	11		
	277V	Interlock										4	4.5	5		6
		Simultaneous				4	5	6				8	9	10		12
480V	Interlock										4	4.5	5	5.5	6	
	Simultaneous				4	5	6				8	9	10	11	12	
50-gallon Short and 55 Gallon Models (Minimum 2500W)	120V	Interlock					2.5	3								
		Simultaneous		3	3.3	4	5									
	208V	Interlock					2.5	3	3.5	3.8	4	4.5	5	5.5		
		Simultaneous		3		4	5	6	7	7.6	8	9	10			
	240V	Interlock					2.5	3	3.5	3.8	4	4.5	5	5.5	6	
		Simultaneous		3		4	5	6	7	7.6	8	9	10	11		
	277V	Interlock					2.5	3			4	4.5	5		6	
		Simultaneous		3		4	5	6			8	9	10		12	
480V	Interlock					2.5	3			4	4.5	5	5.5	6		
	Simultaneous				4	5	6			8	9	10	11	12		
Remaining 30-Gallon through 50-Gallon Models	120V	Interlock		1.5	1.65	2	2.5	3								
		Simultaneous		3	3.3	4	5									
	208V	Interlock	1	1.5		2	2.5	3	3.5	3.8	4	4.5	**5	5.5		
		Simultaneous	2	3		4	5	6	7	7.6	8	9	**10			
	240V	Interlock	*1	1.5		2	2.5	3	3.5	3.8	**4	4.5	5	5.5	6	
		Simultaneous	*2	3		4	5	6	7	7.6	**8	9	10	11		
	277V	Interlock		1.5		2	2.5	3			4	4.5	**5		**6	
		Simultaneous		3		4	5	6			8	9	**10		**12	
480V	Interlock				2	2.5	3			**4	4.5	**5	**5.5	**6		
	Simultaneous				4	5	6			**8	9	**10	**11	**12		

Footnotes for this chart are on page 2.

This sheet reflects UEF regulatory requirements effective January 2018. It replaces all previous versions.

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www.hotwater.com | 800-527-1953 Toll-Free USA | A. O. Smith Corporation | 500 Tennessee Waltz Parkway | Ashland City, TN 37015



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## FOOTNOTES FOR PAGE 1 (KW INPUT AVAILABILITY CHART)

\* Ahead of wattage indicates, Not Available with Incoloy elements (copper elements only) for those voltage and wattage.

\*\* Ahead of wattage indicates 30-gallon mobile home and 30 gallon tall models, Not Available with Incoloy elements.

Some models using lower wattage elements will require a "W" suffix adder to the model number. Refer to the Product Specification sheet to determine requirements by model.

### Circuit Types

C2 Circuit – 2 wire lead, single element models only

A6 Circuit – 2 wire lead, double element models, single phase interlocking

A9 Circuit – 3 wire lead double element models, 3-phase unbalanced or off peak (can be wired single phase) – not available 120v or 277v

P4 Circuit – 4 wire double element models simultaneous operation (can be wired 3-phase simultaneous or single phase simultaneous)

Caution should be taken when ordering P4 Circuit (simultaneous operation) to ensure breaker amperage is sufficient for increased amp pull.

Note: - Circuit types listed above DO NOT APPLY TO ELECTRONIC THERMOSTAT MODELS. Electronic Thermostat models 240v 4500w and 208v 4500w ET Circuits or 240v 5500 & 208v & 240v 4500w ES Circuit.

- Heat Pump and Solar Booster models are excluded from this table.

- Point of use (2.5 to 6 gallon) models are excluded from this table, no optional voltage or wattage available.

## RESIDENTIAL ELEMENT (kW) RECOVERY TABLE

Residential Electric Recovery Table							
Element kW	GPH Temperature Rise °F						
	50	60	80	90	100	120	140
1	8.2	6.8	5.1	4.6	4.1	3.4	2.9
1.5	12.3	10.3	7.7	6.8	6.2	5.1	4.4
1.65	13.5	11.3	8.5	7.5	6.8	5.6	4.8
2	16.4	13.7	10.3	9.1	8.2	6.8	5.9
2.5	20.5	17.1	12.8	11.4	10.3	8.5	7.3
3	24.6	20.5	15.4	13.7	12.3	10.3	8.8
3.5	28.7	23.9	17.9	15.9	14.4	12.0	10.3
3.8	31.2	26.0	19.5	17.3	15.6	13.0	11.1
4	32.8	27.3	20.5	18.2	16.4	13.7	11.7
4.5	36.9	30.8	23.1	20.5	18.5	15.4	13.2
5	41.0	34.2	25.6	22.8	20.5	17.1	14.6
5.5	45.1	37.6	28.2	25.1	22.6	18.8	16.1
6	49.2	41.0	30.8	27.3	24.6	20.5	17.6

Note: Simultaneous operation doubles recovery

This water heater(s) shall be A. O. Smith Model(s) No. \_\_\_\_\_ electric heater, or an approved equal. Heater(s) shall be rated at \_\_\_\_\_ kW, \_\_\_\_\_ Volts, \_\_\_\_\_ Cycle AC and listed by Underwriters' Laboratories. Heater(s) shall have a maximum working pressure of 150 psi, a nominal storage tank capacity of \_\_\_\_\_ gallons with a separate 3/4" tapping for relief valve installation. Unit shall include a rigidly supported anode rod for maximum cathodic protection. Anode rod shall be constructed of \_\_\_\_\_ material. All internal surfaces of the heater(s) exposed to water shall be coated with a glass lining composition that is fused to the tank steel. Electric heating elements shall be \_\_\_\_\_, screw-in design. Element operation shall be double element, non-simultaneous (unless ordered differently). The controls shall include a thermostat with each element and a high temperature cutoff. The jacket shall provide full size control compartments for performance of service and maintenance through front panel openings and enclose the tank with foam insulation. The drain valve shall be located in the front for ease of service. Outer jacket shall be an enamel type finish. Heater(s) shall have a \_\_\_\_\_ year limited warranty for residential installations; \_\_\_\_\_ year commercial installations as outlined in the written warranty. Fully illustrated instruction manual to be included. Code Compliance: Complies with the Federal Energy Conservation Standards effective April 16, 2015, in accordance with the Energy Policy and Conservation Act (EPCA), as amended. Meets the thermal efficiency and standby loss requirements of the U.S. Department of Energy and current edition of ASHRAE/IESNA 90.1 and editions of UBC, CEC and HUD National Codes.

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For Technical Information call 800-527-1953. A.O. Smith Corporation reserves the right to make product changes or improvements without prior notice.