

TYTAN™ WATER HEATER

Electric Inline Water Heater



**PROCESS
TECHNOLOGY**

TYTAN™ SPECIFICATIONS

SPECIFICATIONS

SIZES	12,000 watts to 144,000 watts
VOLTAGES	208 volt to 480 volt, three phase (single phase available). Consult factory for specific wattage/voltage combinations available
TEMPERATURE CONTROL	PID microprocessor based digital thermostat
TEMPERATURE LIMIT	194° F (90° C), depending on operating conditions
TEMPERATURE ACCURACY	+/- 1° F, depending on operating conditions
PRESSURE RATING	100 PSIG (operating)
EFFICIENCY	> 99%
WETTED SURFACES	All titanium standard
INLET/OUTLET	1" MNPT through 72 kW 2" MNPT 96 kW and higher
STANDARD SAFETY FEATURES	<ul style="list-style-type: none">• Grounded construction• EMO emergency stop button• Fluid overtemperature detection (J type thermocouple)• Element overtemperature detection (bi-metallic snap switches)• Control fusing (primary and secondary)• FM approved overtemperature limit controller• Ground fault protection (GFP)
HOUSING	NEMA 1 rated, powder coated metal enclosure
DIMENSIONS	<ul style="list-style-type: none">• 12-48 kW: 29.5" (75 cm) W x 13.5" (34 cm) D x 36.0" (91 cm) H• 72 kW: 37.5" (95 cm) W x 13.5" (34 cm) D x 36.0" (91 cm) H• 96-144 kW: 28.0" (71 cm) W x 17.0" (43 cm) D x 66.9" (170 cm) H
STANDARD CERTIFICATIONS	cULus
OPTIONS	<ul style="list-style-type: none">• CE compliance• Semi S2 compliance• PLC control• Remote interface• Disconnect and circuit breaker• Stainless steel elements and wetted parts• Flanged/sanitary fluid connections• RS remote communications

FEATURES and BENEFITS

- **Improved Process Results:** Heated DI water improves cleaning effectiveness and reduces rinse time in most processes.
- **Cost Saving Design:** >99% element efficiency contributes to low cost of ownership (COO) and excellent return on investment (ROI).
- **Outstanding Cleanliness:** 100% titanium heating elements provide very clean performance for precision cleaning applications.
- **Reliable, Rugged Construction:** Simple, heavy walled element construction for trouble free operation and long life. Baffled element chambers enhance heat transfer efficiency.
- **Outstanding Temperature Responsiveness and Stability:** Excellent temperature accuracy over a wide flow range can substantially improve process consistency.
- **Fast/Easy Maintenance:** Long-life element for minimal process down time. Designed for easy service.
- **Rapid Installation:** Minimal facility requirements. Heater is factory tuned to your specifications. Only power and plumbing connections required.
- **Compact Configuration:** Space-saving design minimizes footprint requirements. Wall mounted up to 72kW; floor mounted to 144kW.

DIMENSIONS

SIZING

To determine required wattage, use the following equation:

$$\text{GPM} \times \text{TEMP RISE } (^\circ\text{F}) \times 0.147 = \text{kW REQUIRED}$$

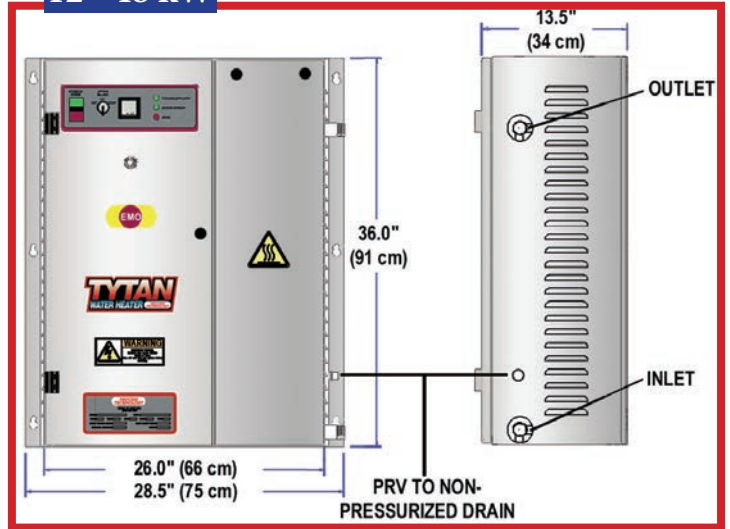
$$\text{LPM} \times \text{TEMP RISE } (^\circ\text{C}) \times .07 = \text{kW REQUIRED}$$

Temperature rise is expressed in degrees F where GPM is gallons per minute of flow desired. Round results up to select unit.

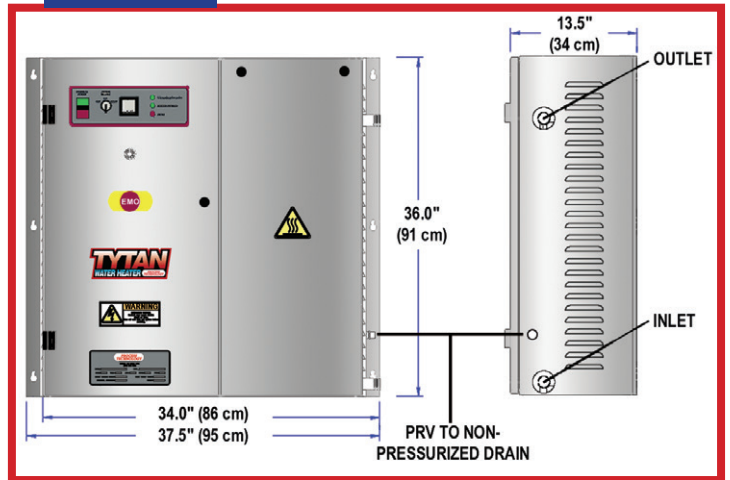
Example: $2.5 \text{ GPM} \times 95^\circ\text{F} \times 0.147 = 35 \text{ kW}$ (Use 36 kW)

CONSULT OUR FACTORY FOR DETAILED SIZING INFORMATION AND APPLICATION ASSISTANCE.

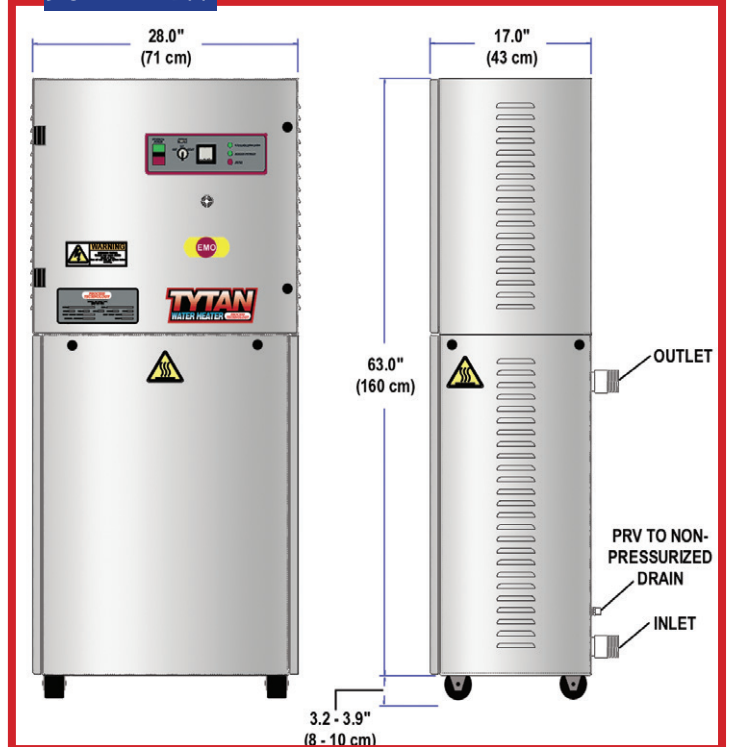
12 - 48 kW



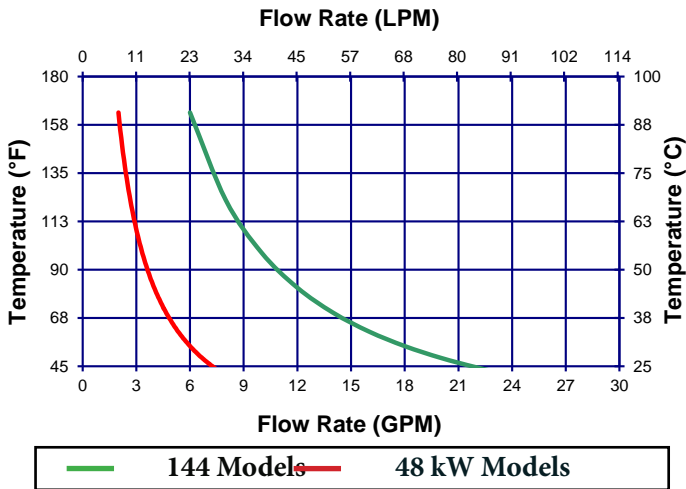
72 kW



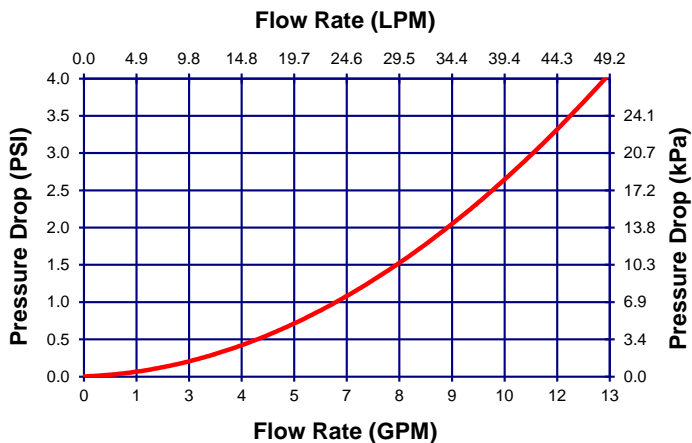
96-144 kW



FLOW VS. TEMPERATURE RISE (ΔT)



PRESSURE DROP - ALL SIZES



TYTAN™ WATER HEATER ORDERING INFORMATION

Series	Wattage	Voltage	Phase	Options
-012 = 12,000 -018 = 18,000 -024 = 24,000 -036 = 36,000 -048 = 48,000 -072 = 72,000 -096 = 96,000 -120 = 120,000 -144 = 144,000	-208 -240 -380 -400 -415 -480 -600	-1 = 1 phase -3 = 3 phase * = specific units	-SC = SEMI S2 and CE compliant -CB = disconnect and circuit breaker -RI = remote interface -RC = RS remote communications -PLC = PLC control -S = stainless steel wetted parts -X = special options (specify in clear text)	
<div style="border: 1px solid black; padding: 2px; display: inline-block;">TY = TYTAN™ water</div>				

HEATER SELECTION MATRIX (by standard heater sizes)

FLOW RATE (LPM/GPM)	TEMPERATURE RISE (DIFFERENTIAL) degrees C / degrees F								
	7/13	15/27	22/40	36/65	45/81	52/94	55/100	65/117	75/135
3.8/1	TY12	TY12	TY12	TY12	TY12	TY18	TY18	TY18	TY24
7.6/2	TY12	TY12	TY12	TY24	TY24	TY36	TY36	TY36	TY48
11.4/3	TY12	TY12	TY18	TY36	TY36	TY48	TY48	TY72	TY72
15.1/4	TY12	TY18	TY24	TY48	TY48	TY72	TY72	TY72	TY96
18.9/5	TY12	TY24	TY36	TY48	TY72	TY72	TY72	TY96	TY120
22.7/6	TY12	TY24	TY36	TY72	TY72	TY96	TY96	TY120	TY120
26.5/7	TY18	TY36	TY48	TY72	TY96	TY120	TY120	TY120	TY144
30.3/8	TY18	TY36	TY48	TY96	TY96	TY120	TY120	TY144	*
34.1/9	TY18	TY36	TY72	TY96	TY120	TY144	TY144	*	*
37.8/10	TY24	TY48	TY72	TY96	TY120	TY144	TY144	*	*
41.6/11	TY24	TY48	TY72	TY120	TY144	*	*	*	*
45.4/12	TY24	TY72	TY96	TY144	*	*	*	*	*



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