HUBBELL
a **nudyne** company

ULTRAPURE SERIES

D

Deionized (DI) Water Heater

Provides a large supply of hot DI water for immediate use. 1–119 gallon capacity, up to 58 kw, single or three phase voltage

High grade construction designed to operate in even the most demanding application

Packaged with all electrical operating controls for trouble-free installation and operation

All 316L stainless steel tank construction resists corrosion

- Storage capacity lowers peak power demand and reduces operating costs
- Full range of sizes available to meet your exact heating needs

Applications

Industrial finishing and cleaning systems for electronic and fabricated metal parts such as PC boards, microchips, capacitors, metal parts, jewelry, aerospace quality bearings, cosmetic and drug packaging systems, glass products, ultrasonic cleaning systems, food processing equipment, water purification and RO systems, sanitary CIP cleaning systems.

Storage Type Deionized (DI) Water Heater Reduces Peak Power Demand

The Hubbell UltraPure D water heater is specifically designed for systems requiring large draws of hot DI/RO water with a fixed period of time between cycles. The kW rating is sized to recover enough capacity during the idle period so that the tank will be fully hot when the next draw down begins. The longer the time of recovery between the required usages, the lower the kW input required to heat the water.

Over 100 years of water heating expertise

Hubbell water heaters are the right choice for your commercial and industrial applications. We have water heating solutions for most energy sources with storage capacities from 1–10,000 gallons — all designed, engineered, and manufactured for reliability and longevity coupled with unparalleled support and service.

Intertek

ISO 9001:2015

MADE in the USA
Buy American Act Compliant
Contains Imported Components

Heater Specifications

Vessel	316L Stainless Steel
Capacities	1–119 Gallons
Orientation	Vertical or Horizontal
Voltages	120–600 Volt
Phase	1Φ or 3Φ
Inlet/Outlet Size	1 Gallon Unit: ¼" Male NPT 3–40 kW: ¾" Female NPT 45–58 kW: 1-½" Male NPT
Relief Valve opening	¾" Female NPT
Thermostat Range	Electronic Type: 32–194°F
Hi-Limit	Immersion type: 100–240°F Electronic Type: 205°F (Fixed)
Design WP	150 PSI
Design TP	300 psi
Elements	316L Stainless Steel
Insulation	2" Fiberglass
Warranty	Tank: 3 years Electrical: 1 year
Jacket	20 GA Galvanized Steel
Finish	Grey Hammertone

Standard Equipment

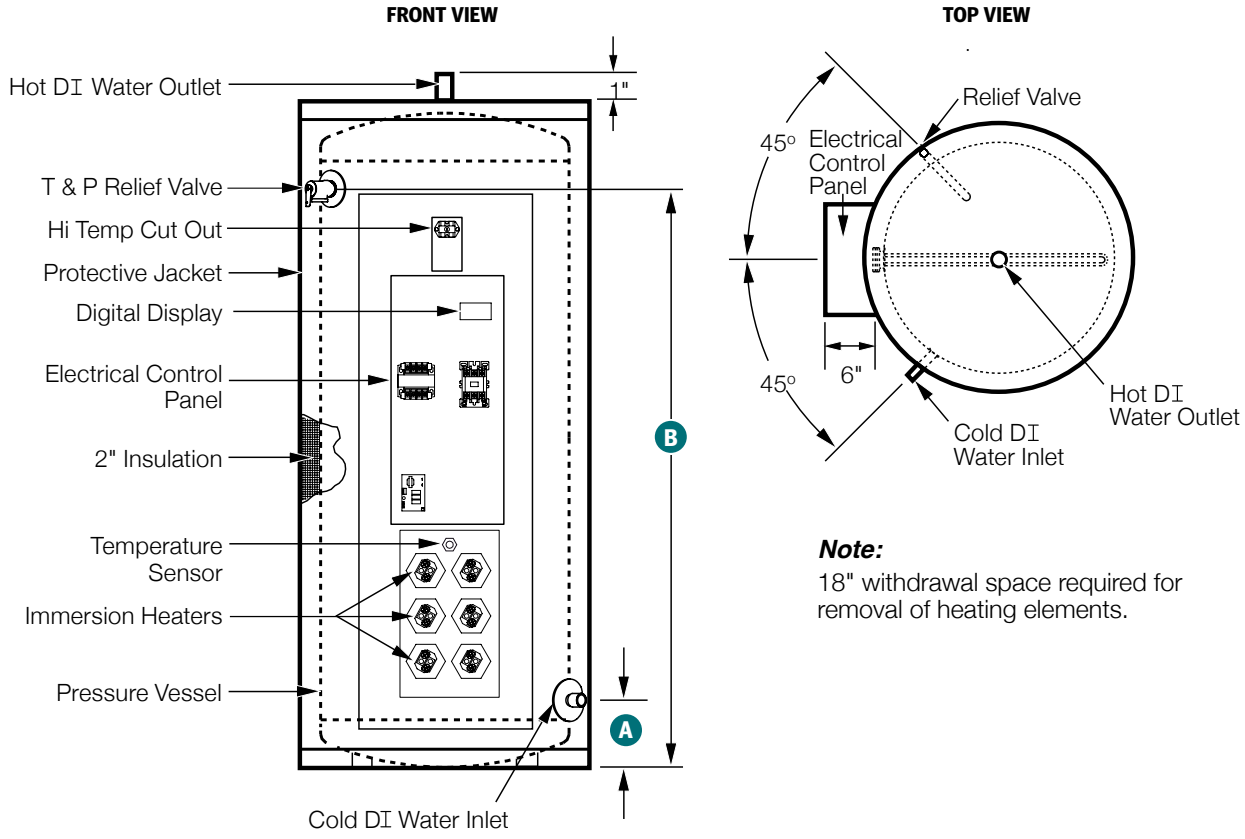
- All Type 316L Stainless Steel construction
- 316L Stainless Steel immersion electric heating elements, passivated and electropolished
- Digital display temperature controller
- Safety Hi-Temperature cut out with manual reset
- Heavy gauge protective jacket
- Heavy duty 2" thick energy efficient insulation
- ASME rated combination temperature and pressure 316L stainless steel body safety relief valve set at 150 psi, 210°F
- Low water cut-off 316L stainless steel float type (available on 6–120 gallon models)

Alternative DI/RO Hubbell Water Heaters

- For DI/RO water heaters greater than 119 gallons storage, please reference Hubbell Signature SH brochure
- For instantaneous DI/RO water heaters typically greater than 60 kW, please reference Hubbell Signature CR brochure
- For semi-instantaneous point-of-use DI/RO water heaters, please reference Hubbell UltraPure HD brochure

All information is subject to change without notice. Consult factory for submittal drawings.

Dimensions



Note:
18" withdrawal space required for removal of heating elements.

UltraPure D Dimensional Data

Base Model Number	Storage Capacity (Gal)	Dimensions (Inches)				Shipping Weight (lbs.)
		Overall Diameter	Overall Height	Floor to Inlet "A"	Floor to T & P "B"	
D1	1	9	9	bottom	6	15
D30	30	20	41.5	5	34	210
D40	40	20	58.75	5	51	225
D50	50	24	44	6	39	325
D65	65	24	52	6	43	350
D80	80	24	61	6	52	450
D100	100	28	53	7	43	500
D120	119	28	66.5	7	57	575

Note: UltraPure D1 is available in 1 kW, 120 Volt or 240 Volt, 1 Phase only.
For 6 or 16 gallon point-of-use capacities please refer to the UltraPure HD brochure.

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UltraPure D Sizing Information

Step 1: Determine the variables listed below.

Variables

1. Hot Water Flow Rate: _____GPM
2. Time hot water at above rate is required: _____Minutes
3. Recovery period until next usage: _____Minutes
4. Water Temperature:
   _____°F Incoming Cold
   _____°F Outgoing Hot
5. Power Supply:
6. _____Volts _____Phase

Step 2:

$$\frac{\text{Flowrate (variable 1) X Time On (variable 2)}}{0.70} = \text{Storage Capacity}$$

Step 3:
Select the UltraPure D that has the storage capacity solved for above.

Step 4:
(Time On (variable 2) x 0.80) + Time Off (variable 3) = Y

Step 5:

$$\frac{\text{Storage Capacity}}{Y} = \text{GPM}$$

Step 6:
Size the kW to match the GPM solved for in step 5 at the desired temperature rise. See kW Selection Chart for sizing.

Example:
Twice an hour the production line requires 8GPM of hot DI water for 10 minutes. After this, the system remains off for 20 minutes before beginning the cycle again. Incoming water is 60°F and desired outlet temperature is 120°F. Power available is 480 Volt, 3 Phase.

Step 1:
Solve for the variables:

1. Hot water flow: 8 GPM
2. Time On: 10 Minutes
3. Time Off: 20 Minutes
4. Incoming Cold Water: 60°F
5. Outgoing Hot Water: 120°F

Step 2:
8 x 10 = 80 ÷0.70 = 114

Step 3:
Select the D120 because the storage capacity of the D120 is the closest match to the value solved for in Step 2.

Step 4:
10 x .80 = 8.0 + 20 = 28

Step 5:
120 ÷ 28 = 4.3 GPM

Step 6:
Select the 40 kW size at a 60°F rise.
Specify Model: D120-0-40SST4

Note: In comparison, an instantaneous heater for this application would have to be 70 kW

All information is subject to change without notice. Consult factory for submittal drawings.

Heating Capacity

kW Rating	Recovery Rate in GPM at °F Temperature Rise					
	40°	60°	80°	100°	120°	140°
6	1.0	0.7	0.5	0.4	0.3	0.2
8	1.4	0.9	0.7	0.6	0.5	0.4
10	1.7	1.1	0.8	0.7	0.6	0.5
12	2.0	1.4	1.0	0.8	0.7	0.6
15	2.6	1.7	1.3	1.0	0.8	0.7
20	3.4	2.3	1.7	1.4	1.1	1.0
24	4.1	2.7	2.0	1.6	1.4	1.2
30	5.1	3.4	2.6	2.1	1.7	1.5
35	6.0	4.0	3.0	2.4	2.0	1.7
40	6.8	4.5	3.4	2.7	2.3	2.0
45	7.7	5.1	3.8	3.1	2.6	2.2
54	9.2	6.1	4.6	3.7	3.1	2.6
58	9.9	6.6	4.9	4.0	3.3	2.8

kW and Amperage Selection Charts

1 Gallon kW and Amperage *(Amperage shown in chart below indicates available models)*

kW	1 Phase Voltages			
	120	240	277	480
1	8	4		

30 – 120 Gallon kW and Amperage *(Amperage shown in chart below indicates available models)*

kW	1 Phase Voltages			3 Phase Voltages		
	208	240	480	208	240	480
6	29	25	13	17	15	7
8	38	33	17	22	19	10
10	48	42	21	28	24	12
12	58	50	25	33	29	15
15	72	62	31	42	36	18
20	96	83	42	56	48	24
24	115	100	50	66	58	29
30	144	125	63	83	72	36
35	169	146	73	97	84	42
40	192	167	83	111	96	48
45	216	188	94	125	108	54
54	259	226	113	150	130	65
58	279	243	121	162	139	70

Notes:

1. The kW selections to the left are shown for convenience. A full selection of kW ratings from 1.5 to 58.5 kW is available by entering the desired kW into the model number on page 6.
2. For alternative voltages, including 120, 277, 380, 415, 440, 575 and 600 volt please consult factory.

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UltraPure D Model Number Designation

MODEL	STORAGE CAPACITY	LOWER kW RATING *See chart on page 5*	VESSEL TYPE	VOLTAGE / PHASE	OPTIONAL EQUIPMENT
D	1 30 40 50 65 80 100 120	1–58	**SS** = Stainless steel 316L	**A** = 120-1 **RS** = 208-1 **S** = 240-1 **W** = 277-1 **R** = 208-3 **T** = 240-3 **T3** = 380-3 **T7** = 415-3 **T5** = 440-3 **T4** = 480-3 **T6** = 600-3	Write/type optional equipment code in the gray box below in alphabetical order. For multiple options separate codes with a dash (–).

D		–		–	SS		–	

Example: D120-0-40SST4-C35

An UltraPure D with 119-gallon capacity and a 40 kW heating element. Tank is stainless steel and operates at 480 V, 3 phase, 60 Hz power. With optional BACnet communication module with T1000 digital controller.

Optional Equipment *Optional equipment must be called out in the written specifications, use the codes below.*

Controller

- **C3** Immersion adjustable safety hi-limit cutout with manual reset (100°F - 240°F)
- **C10** Fused power circuits
- **C31** Leak detection - includes sensor pad and dry contact for BMS notification
- **C35** BACnet communication module with T1000 digital controller

Electrical

- **E1** Fused low voltage transformer

General

- **G1** Combination temperature & pressure gauge: 3.5" dial, 70°F - 250°F, 0-200 PSI, tank mounted
- **G16** NEMA 4X Rating
- **G17** NEMA 4 Rating
- **G22** 316L stainless steel temperature and pressure relief valve

Vessel

- **V9** Passivated/electropolished pressure vessel
- **V10** 1-1/2" male NPT inlet and outlet water connections
- **V15** Additional 3/4" FNPT tappings
- **V16** Additional 1-1/2" FNPT tappings
- **V23** 304 stainless steel protective outer jacket (painted upon request)
- **V40** Flanged inlet and outlet connections (ANSI Class 150, please specify size)

Please note: Optional equipment may impact overall dimensions and weight. Please request submittal drawing from factory.

Available Accessories *(Fill out form below to order accessories.)*

10-year Warranty: 10-year non pro-rated tank warranty, specify part number "VESSEL WARRANTY"

Accessories Name _____ **Part #** _____

All information is subject to change without notice. Consult factory for submittal drawings.

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