

Rep Name: \_\_\_\_\_

Project: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Location: \_\_\_\_\_

Email: \_\_\_\_\_

Address: \_\_\_\_\_

Date:        /        / \_\_\_\_\_

## Overview

The DURATION III is a fully packaged water-to-water indirect Domestic Hot Water system specifically engineered to complement any hot water source or boiler. More importantly, it offers low cost of ownership through simplicity, high efficiency, durability and ease of installation.

To ensure longevity, the DURATION III has a durable 316 stainless steel brazed-plate heat exchanger. All wetted parts (potable water side) are lead free and made of robust stainless steel, copper or copper alloy materials. The construction features a double-wall heat exchanger with a revolutionary true air gap.

## Available Models

Instantaneous Models		Model Highlights:
<input type="checkbox"/> Model Number	<input type="checkbox"/> Part Number	These models are designed to be used with a large supply of hot water. These models are designed to provide hot domestic water without the use of a storage tank. The boiler side piping features an electronically controlled three-way control valve that diverts the flow of the boiler water through or around the heat exchanger, depending on the load. Both the boiler and domestic side piping come with wye strainers. The domestic piping comes with various temperature and pressure measuring devices to maintain accurate heating.
<input type="checkbox"/> D3-30I	<input type="checkbox"/> DWH3030102	
<input type="checkbox"/> D3-50I	<input type="checkbox"/> DWH3050102	
<input type="checkbox"/> D3-80I	<input type="checkbox"/> DWH3080102	
Pumped Models		Model Highlights:
<input type="checkbox"/> Model Number	<input type="checkbox"/> Part Number	These models are designed to be closely coupled to a condensing boiler and a storage tank for hot water supply. This model group comes with both boiler side and domestic side pumps. These models can be ordered with an optional air expansion tank installed on the boiler side piping coupled with a fill line from the domestic piping. The domestic piping comes with various temperature and pressure measuring devices to maintain accurate heating.
<input type="checkbox"/> D3-30P	<input type="checkbox"/> DWH3030202	
<input type="checkbox"/> D3-30PE	<input type="checkbox"/> DWH3030212	
<input type="checkbox"/> D3-50P	<input type="checkbox"/> DWH3050202	
<input type="checkbox"/> D3-50PE	<input type="checkbox"/> DWH3050121	
Base Models		Model Highlights:
<input type="checkbox"/> Model Number	<input type="checkbox"/> Part Number	These models provide a versatile platform to deliver hot water solutions. This design allows for the customer to install the piping, pumps, controls, and etc. of their choosing on our platform, cabinet, heat exchanger, and control panel. Optional parts and accessories are available, but do not come standard with these models.
<input type="checkbox"/> D3-30	<input type="checkbox"/> DWH3030002	
<input type="checkbox"/> D3-50	<input type="checkbox"/> DWH3050002	
<input type="checkbox"/> D3-80	<input type="checkbox"/> DWH3080002	

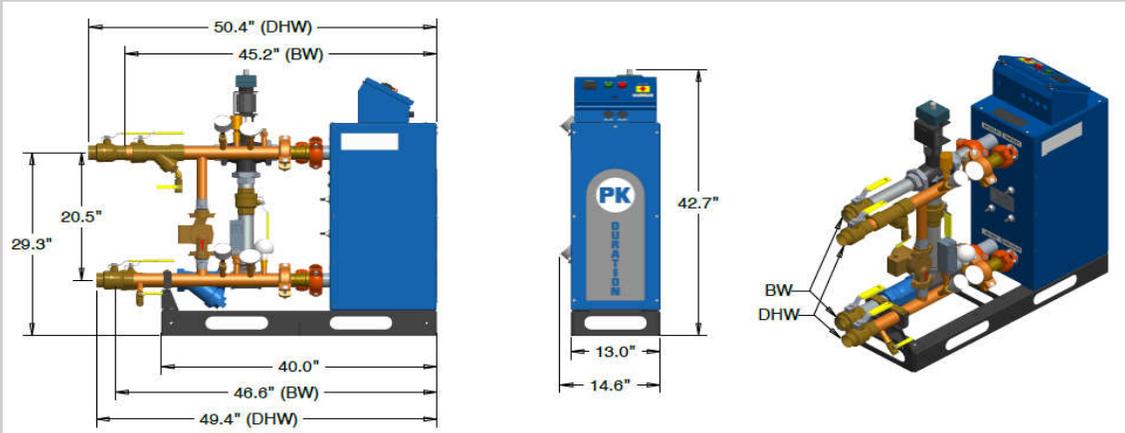
**Notes:**

- All DURATION III models are designed to be able to be mated side by side to reduce their footprint.
- Harsco Industrial Patterson-Kelley reserves the right to make changes at any time without notice.



# P-K DURATION III Instantaneous

MODELS: D3-30I, D3-50I, & D3-80I



\*Dimensions of pipe length can vary slightly due to joint engagement

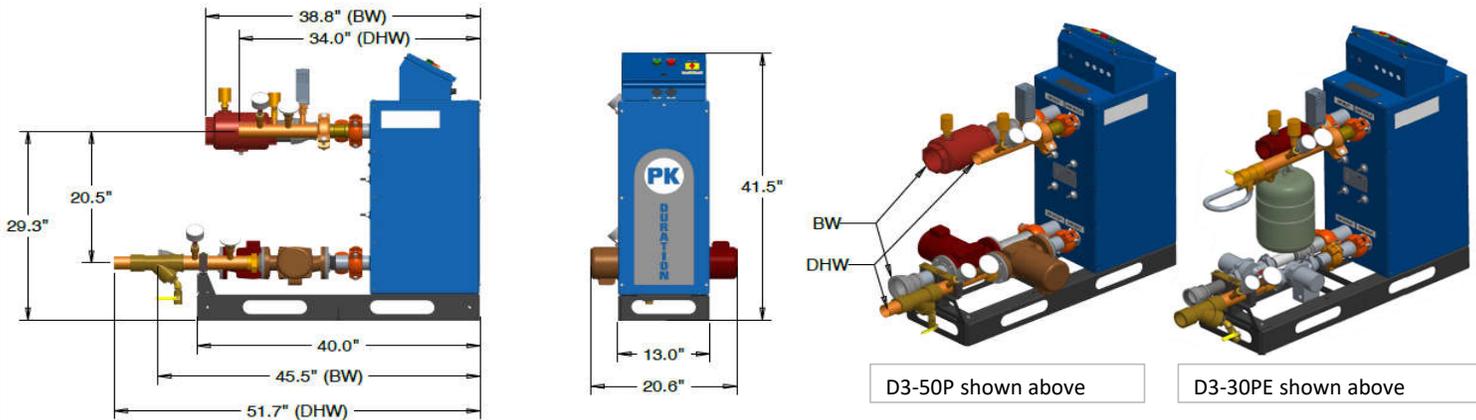
DURATION III INSTANTANEOUS PERFORMANCE SPECS					
DHW Temperature Rise	Duration III Model	DHW Flow Rate	Boiler Water Inlet	Boiler Water Outlet	Boiler Water Flow Rate
40 °F to 140 °F	D3-30I	25 GPM	160°F	105°F	46 GPM
	D3-50I	45 GPM			83 GPM
	D3-80I	65 GPM			100 GPM
60 °F to 120 °F	D3-30I	50 GPM	150°F	105°F	68 GPM
	D3-50I	70 GPM			94 GPM
	D3-80I	82 GPM			100 GPM

Models	D3-30I	D3-30I	D3-80I
# Plates in Heat Exchanger	30	50	80
DHW Heat Exchanger Type	ASME Section VIII – Div. 1 “U” Stamp Double-Wall Brazed Plate		
Plate & Brazing Material	316 Stainless Steel Plates w/ Copper Brazing		
Domestic Water (Open Loop) Piping Detail	2” O.D. Lead-Free Copper Terminates with 2” Ball Valves (Sweat)		
Boiler Water (Closed Loop) Piping Detail	2” Schedule 40 Steel Pipe Terminates with 2” Ball Valves (NPT-F)		
Boiler Water Flow Device	Electronically Controlled 3-Way Diverting Valve		
Electrical Supply	120VAC, 1 Phase, 60Hz (10 Amps Max)		



# P-K DURATION III Pumped

MODELS: D3-30P, D3-30PE, D3-50P, & D3-50PE

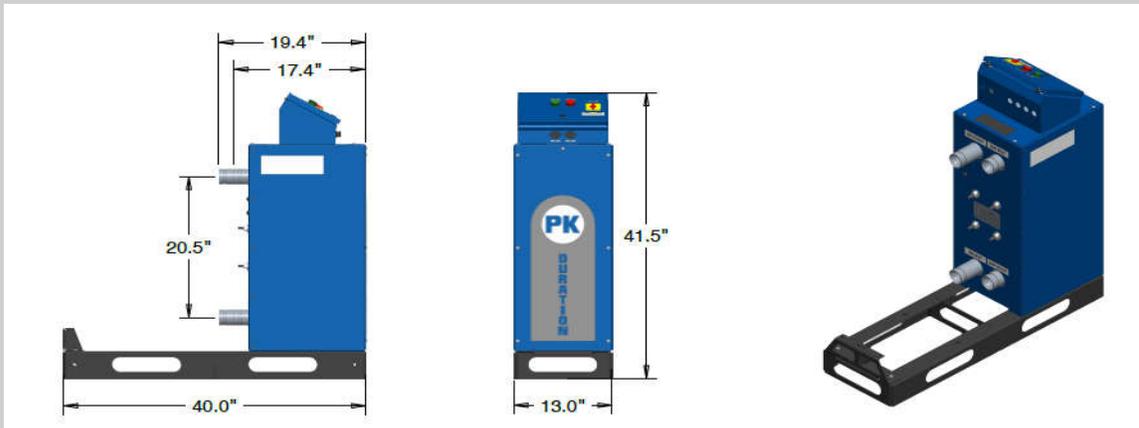


\*Dimensions of pipe length can vary slightly due to joint engagement and model selection

Models	D3-30P/D3-30PE	D3-50P/D3-50PE
# Plates in Heat Exchanger	30	50
DHW Heat Exchanger Type	ASME Section VIII – Div. 1 "U" Stamp Double Wall Brazed Plate	
Plate & Brazing Material	316 Stainless Steel Plates w/ Copper Brazing	
Domestic Water (Open Loop) Piping Detail	2" O.D. Lead-Free Copper Terminates with 2" tube connection	
Domestic Water Flow Device	Lead-Free Bronze Circulation Pump	
Boiler Water (Closed Loop) Piping Detail	2" Schedule 40 Steel Pipe	
	2" FPT connection	3" FPT connection
Boiler Water Flow Device	Circulation Pump	
Electrical Supply	120VAC, 1 Phase, 60Hz (15 Amps Max)	

# P-K Duration III Base

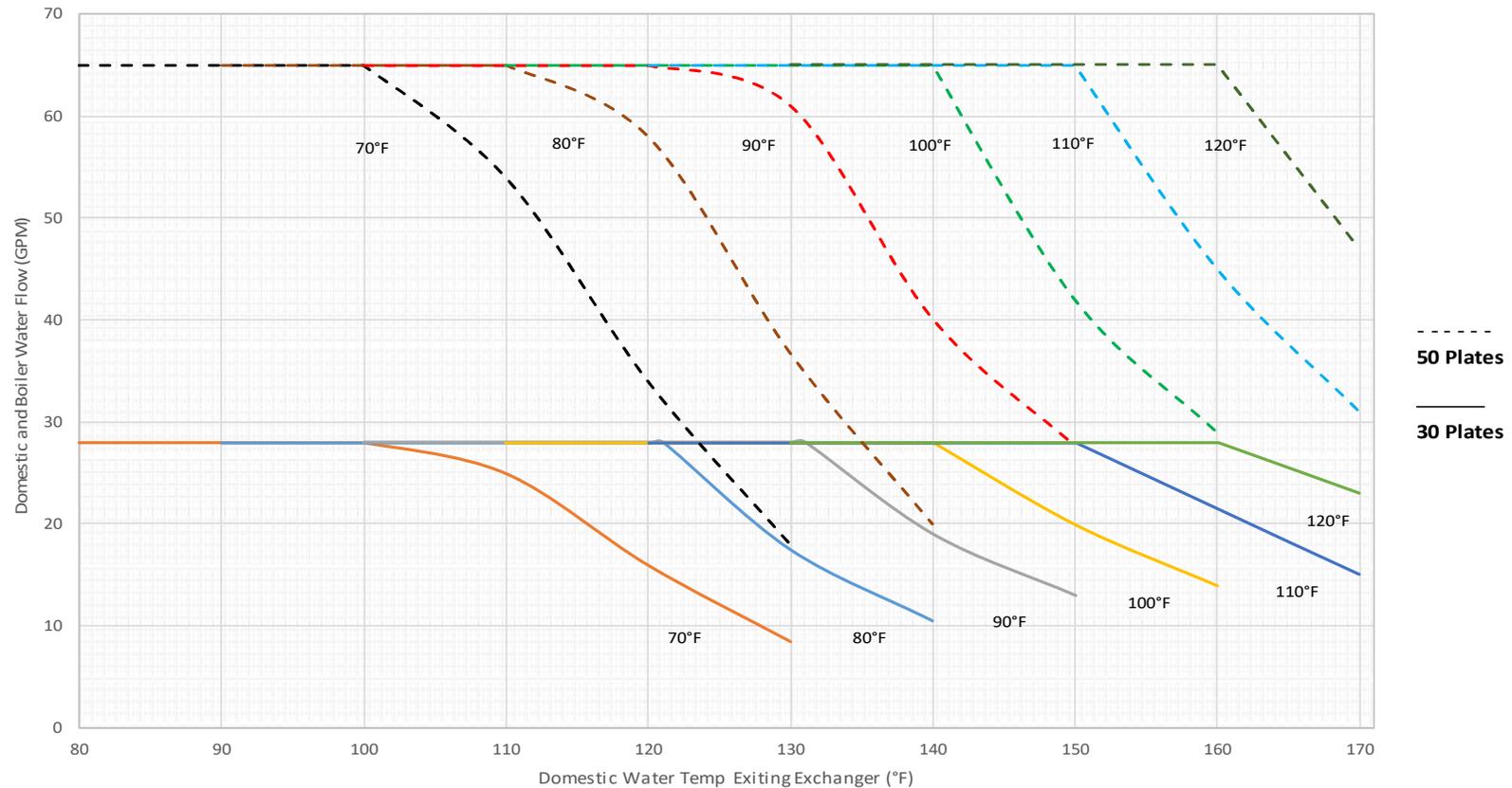
MODELS: D3-30, D3-50, & D3-80



# P-K DURATION III Pumped Performance



Duration III Pumped Heat Exchanger Sizing Guide



This chart is a guide to sizing the Duration III D3-30P, D3-30PE, D3-50P and D3-50PE models. These values assume the following design criteria: boiler water and domestic water flow rates are equal; and the entering boiler water temperature is 20°F higher than the exiting domestic water temperature. Due to the nature of calculating pumped package heating systems the boiler water and domestic water  $\Delta T$ 's are equal. The temperature labels next to each line on the graph represent the temperature of the incoming domestic water. These temperatures were used to create the lines on the graph by plotting data from 10 to 60 degree  $\Delta T$ 's. The solid lines represent the capability of the 30-plate models, dashed lines represent the capability of the 50-plate models.

When sizing with this chart, size the unit such that the operating conditions fall on or below the desired line. Pumped packages are limited to their corresponding pump flow rate at 10ft of estimated head pressure.

