

LAARS E-THERM®



Commercial Air-to-Water Natural Refrigerant Heat Pump Water Heater

ECHV Indoor / Outdoor, Size 170 MBH (50 kW)



Submittal Data

Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Project Name:

Location:

Contractor:

- Commercial air-to-water heat pump water heater
- CO₂ natural refrigerant - non-toxic, non-flammable, low Global Warming Potential of 1
- Ultra high COP
- Up to 180°F domestic hot water
- Can be used in high ambient or below freezing temperature environments
- Includes double wall heat exchanger to separate potable water from refrigeration loop
- 1-Year limited warranty

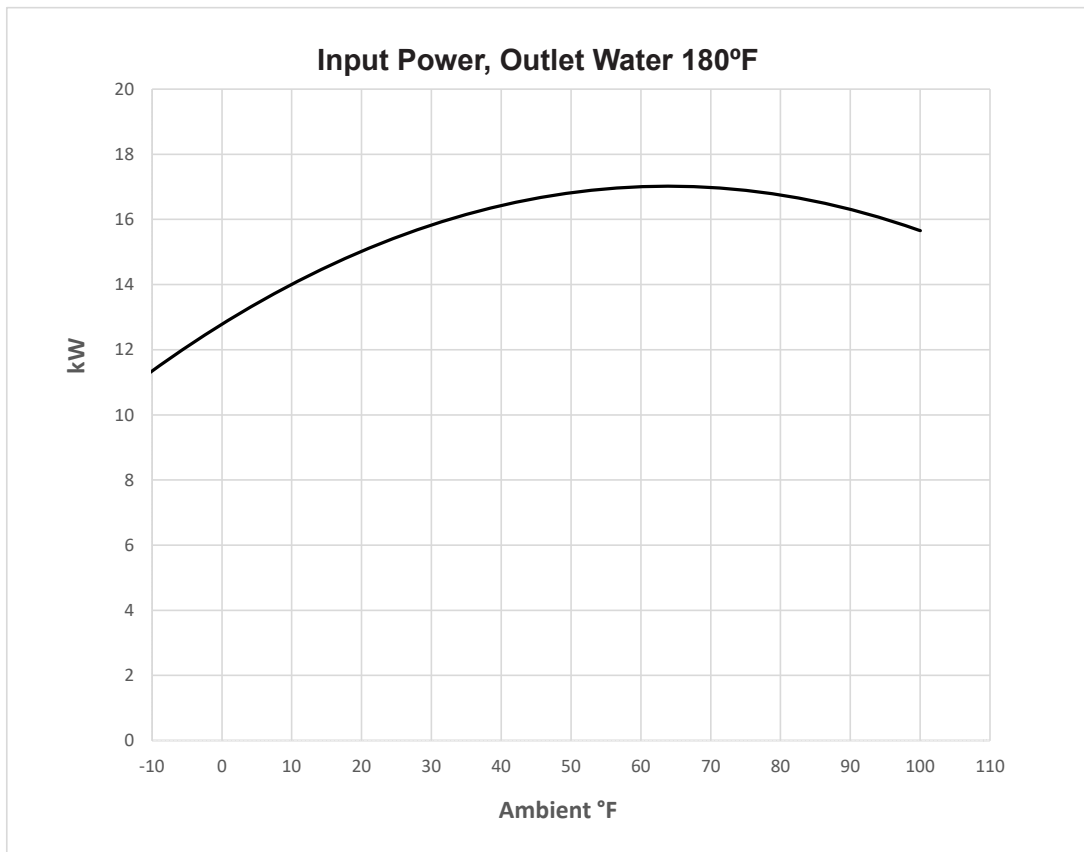
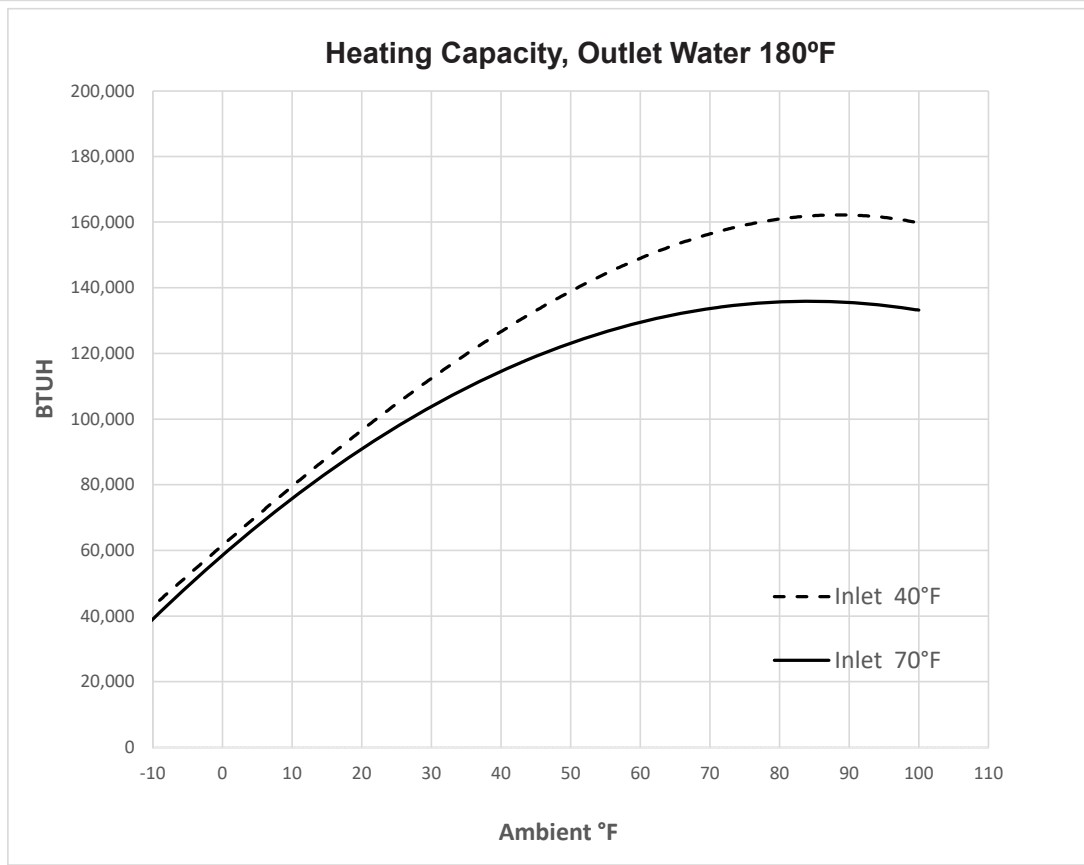
Performance Data

Nominal Heating Capacity		170 MBH	50 kW
Domestic Hot Water Data	Outlet Temp Range	120 to 180°F	49 to 82°C
	Flow Rate	1.4 to 7.5 gpm	5.3 to 28.3 lpm
Operating Conditions	Inlet Water Pressure, Maximum	150 psi	21.8 kPa
	Inlet Water Temperature Range	38 to 90°F	3 to 32°C
	Entering Air Temperature Range	-10 to 115°F	-23 to 46°C
	Ambient Temperature Range	-10 to 115°F	-23 to 46°C
Environmental Protection	Display Cover	NEMA 4X/13	
	HMI Screen	NEMA 4X	
Refrigerant	Type	R744 (CO ₂)	
	Discharge Pressure, Maximum	1885 psi	130 bar
	Suction Pressure, Maximum	1233 psi	85 bar
Defrost Type		Hot Gas Bypass	
Fan	Type x Quantity	Axial (2)	
	Maximum Total Air Flow Rate	11,300 cfm	19,200 m ³ /hr
Gas Cooler/ DHW Heat Exchanger	Type	Double Wall	
	HX Material, Potable Side	Stainless Steel	

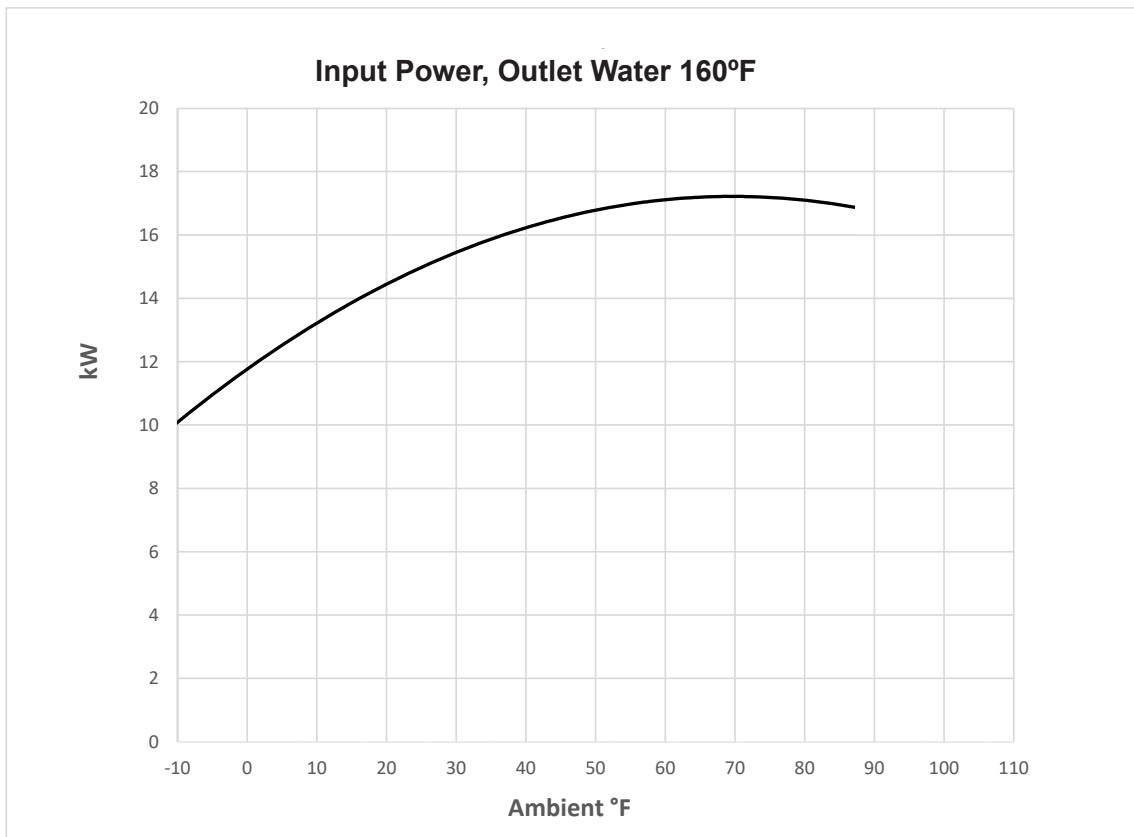
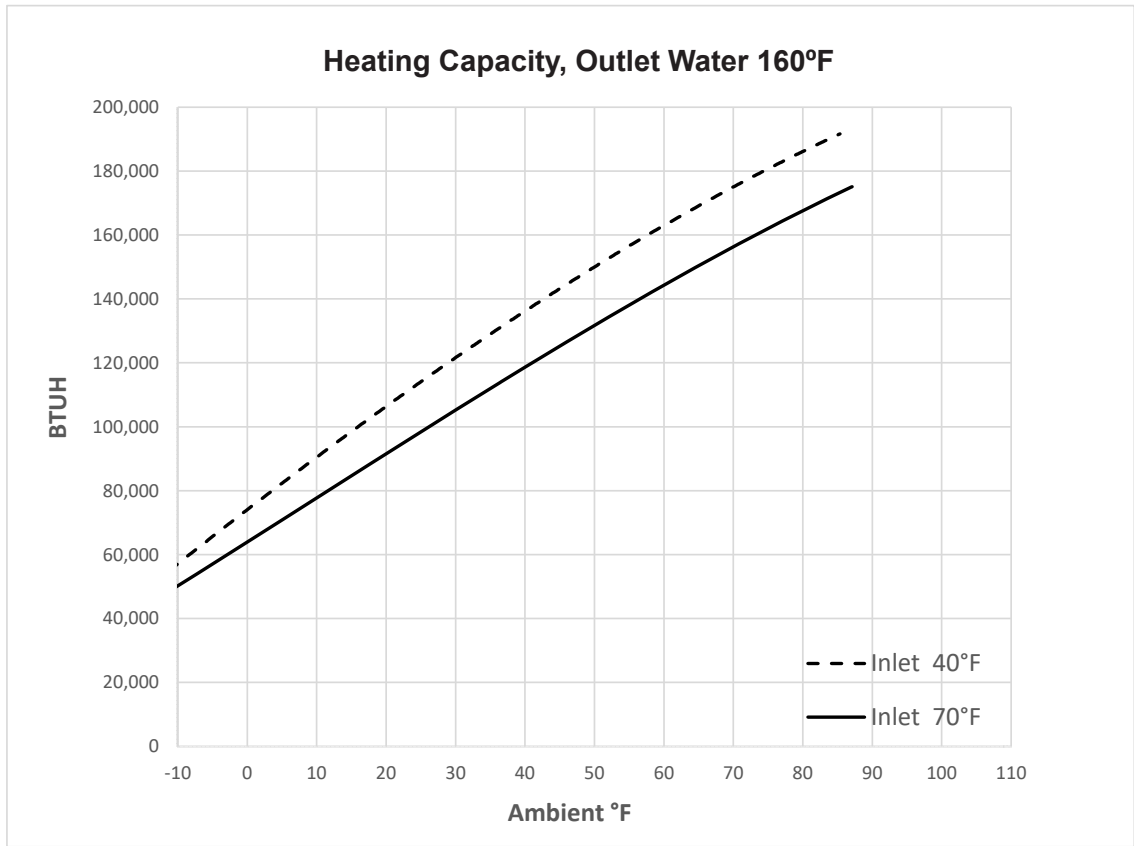
Electrical Data

Electrical Data	Service Voltage	208V 60 Hz	480V 60 Hz
	Phase	3	3
	MCA	68.9 A	35.6 A
	MOP	118.9 A	59.6 A
	FLA	56.4 A	29.6 A
	SCCR, RMS Symmetrical Maximum	100 kA	100 kA

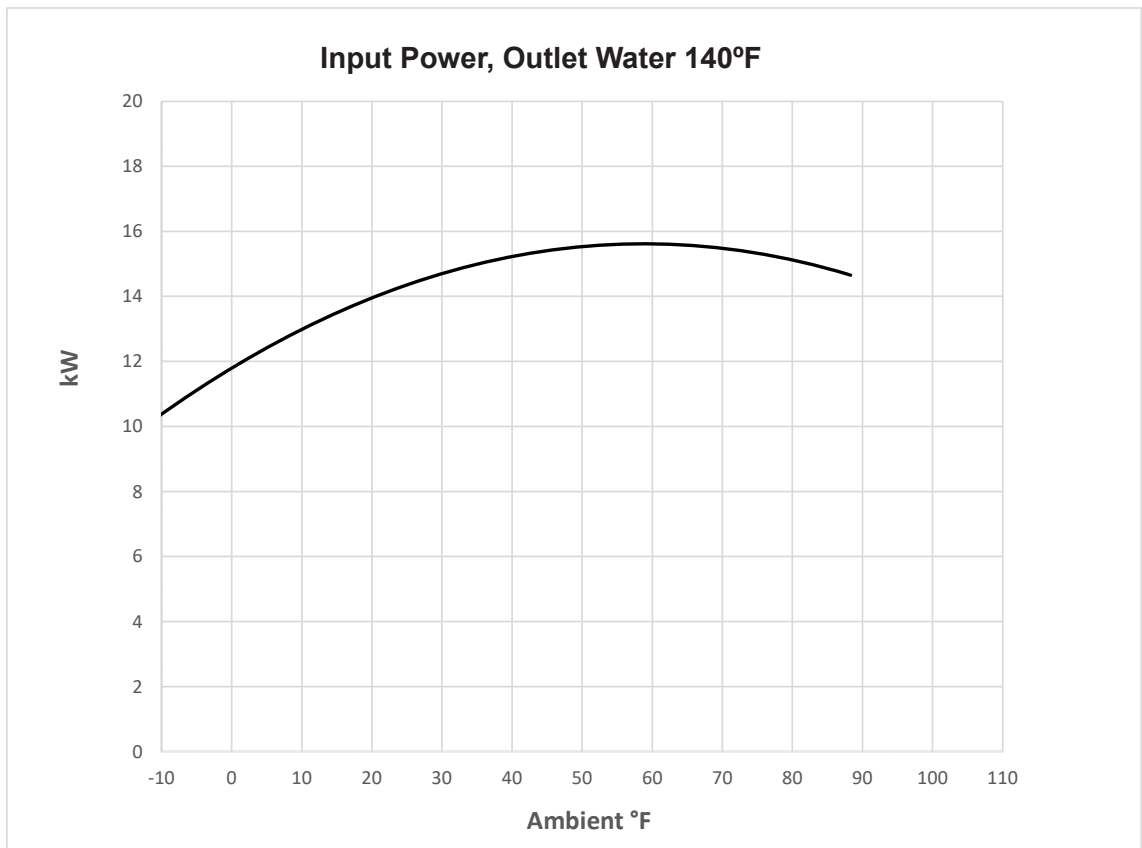
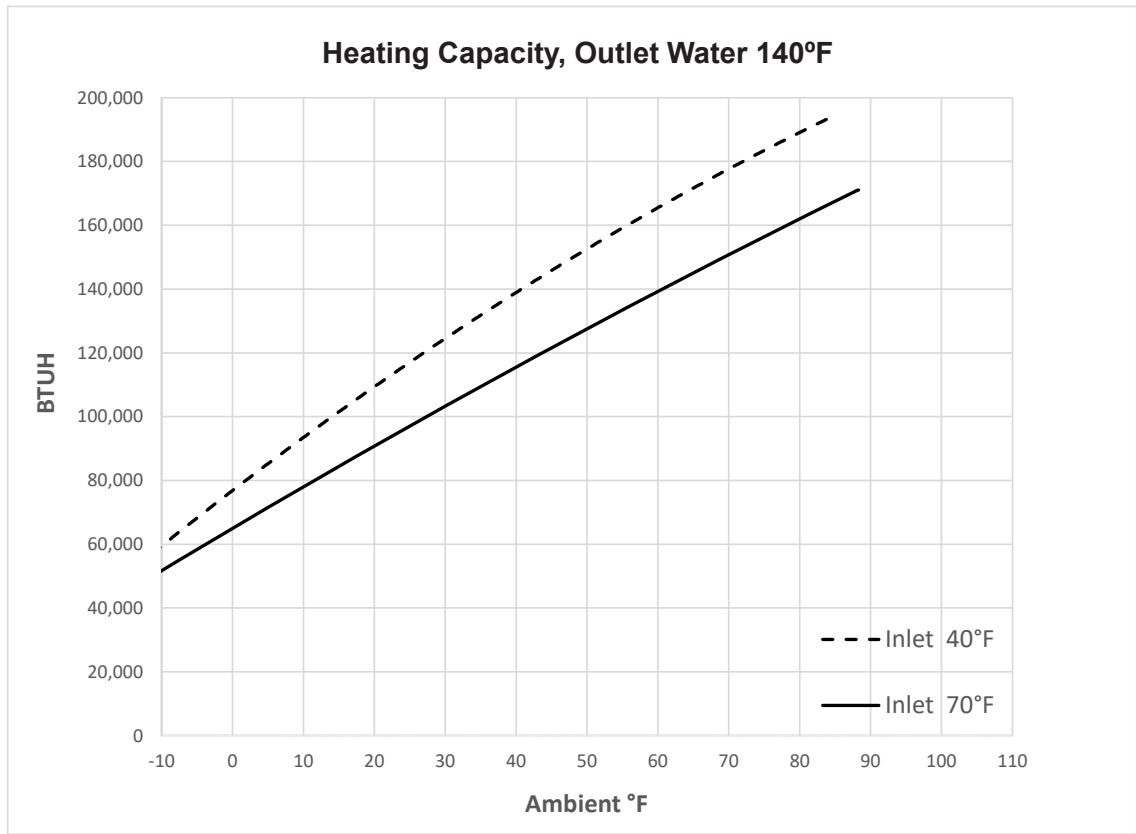
Performance Map Sizing Data
180°F Outlet Water Temperature



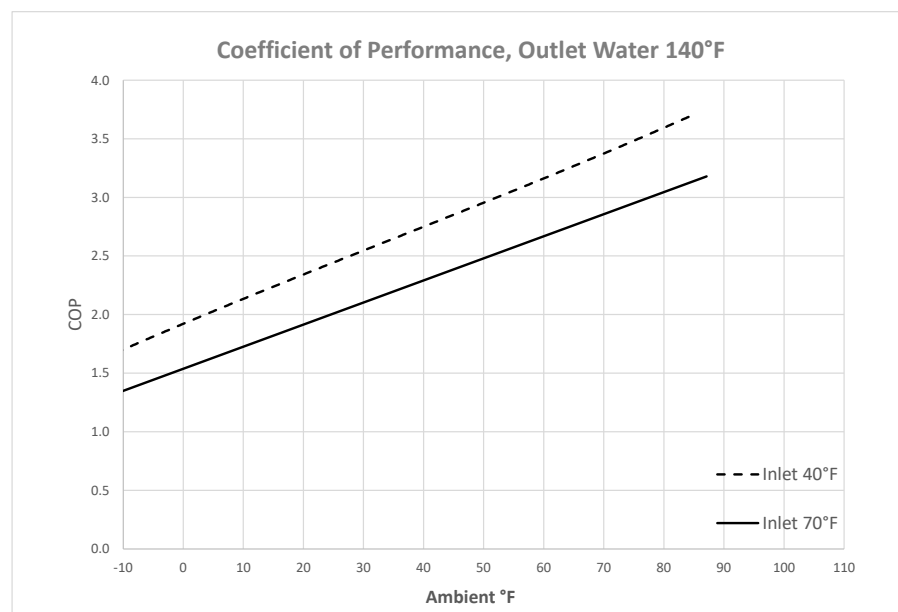
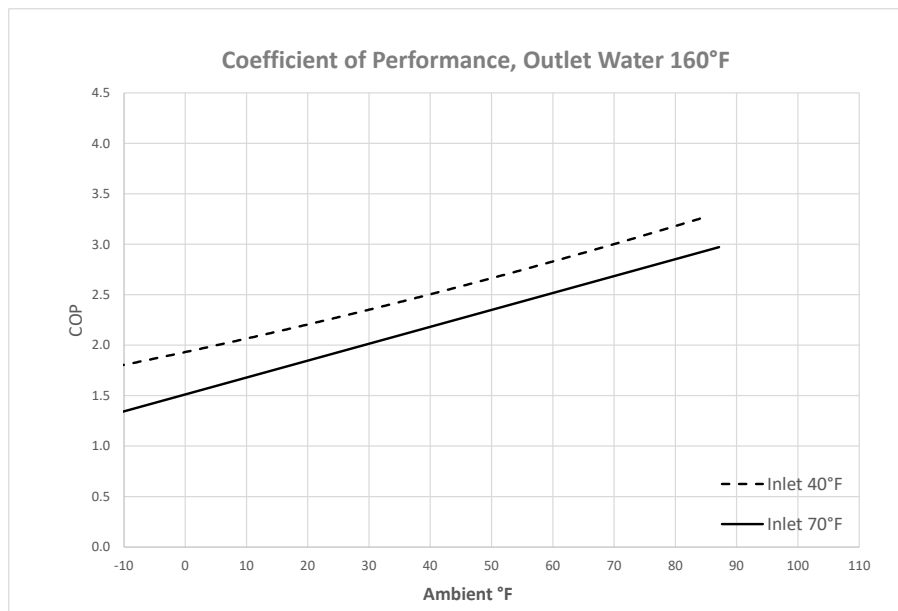
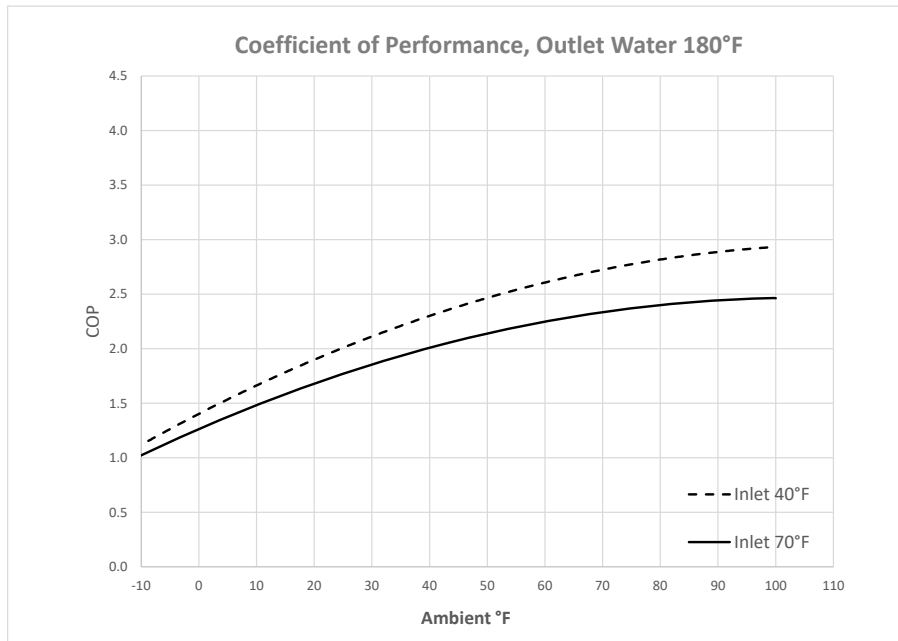
Performance Map Sizing Data
160°F Outlet Water Temperature



Performance Map Sizing Data
140°F Outlet Water Temperature



COP Data



Weights and Dimensions

Product Weight	Operating Weight	3080 lbs	1397 kg
	Shipping (crated & charged)	3820 lbs	1733 kg
	Product - Dry	3061 lbs	1388 kg
Installation Clearances (Minimum)	Both Sides	0 ft	0 cm
	Front and Rear	4 ft	122 cm
	Above the Heat Pump	10 ft	305 cm
Outside Dimensions	Height	71.7 in	182 cm
	Width	34.1 in	87 cm
	Length	69.0 in	175 cm
Water Connections	Water Inlet	1" NPT Male	
	Hot Water Outlet	1" NPT Male	
	Condensate Drains (4)	1" NPT Female	

