

LIQUID COOLED PRODUCTS

SELECTION GUIDELINE 2026

Total Thermal Solution

WAKEFIELDTHERMAL.COM | 603.635.2800

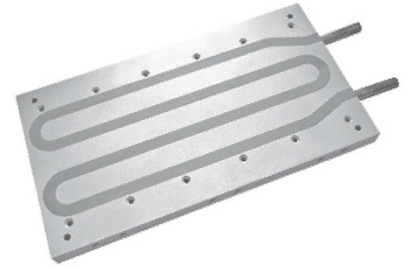
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TABLE OF CONTENTS

3.....	Liquid Cold Plates
4.....	180-10 & 180-11 Series
5.....	180-12 & 180-20 Series
6.....	Exposed Tube
8.....	Fully Buried Tube
11.....	Power Module Coolers
13.....	Friction Stir Welded Cold Plates
15.....	High Performance Liquid Cold Plates for High Performance Systems
16.....	On-Chip Liquid Cooling for AI& Hyperscale Data Centers
17.....	Hydro-Air Series Heat Exchangers
34.....	High Performance Re-circulating Liquid Chillers
41.....	Compact Liquid Chillers

LIQUID COLD PLATES



Liquid cooling is a natural evolution beyond air cooling where either due to thermal requirements or footprint requirements, the desired performance can no longer be economically met by air cooling.

There are many ways to accomplish liquid cooling, but the most common method is to have a plate with a flow path that moves liquid under the devices. After the heat is absorbed into the liquid, it is taken out of the plate and into the larger system. While water or water/glycol are the most common fluids used in liquid cooling, gasoline, oil, and refrigerant are other fluids that can be utilized.

There are lots of ways to construct a cold plate and the methods can be driven by the level of performance needed, the materials needed, or the environmental requirements.

One construction method is to use a series of cross drilled holes in a plate. The holes intersect in the plate to determine the flow pattern and unneeded patterns are plugged. This construction method can be cost effective, but the pattern is limited to straight lines.

Another method is to embed a tube in a plate by machining a groove in the plate. The tube can either be placed toward the top surface of the plate to provide better cooling to devices mounted on that surface, or it can be embedded further into the plate so that it cools devices mounted on both sides of the plate. This option provides greater flexibility, but the thermal performance is limited because of the surface area of the tube perimeter.

To get more performance, extended surface area in contact with the fluid is required, which leads to machined cold plates. The cold plate is constructed of a plate that has been machined to form some flow passages and then a cover is assembled to capture the flow. The extended surface area can be machined in place or installed by use of a piece of folded fin. The cover can be flat or be another machined plate. The method of assembly of the two parts can be done by gasket/screw, glue/screw, brazing, or welding and is dependent on the required performance and the requirements of the environment.

180-10 & 180-11 SERIES

Standard P/N	Cold Plate Body Nominal Dimensions				Overall Length in. (mm)	Overall Thermal Resistance (Plate to Inlet Water)	Weight lbs. (g)
	Length "A" in. (mm)	Width in. (mm)	Thickness in. (mm)	Channel width in. (mm)			
180-10-6C	6.000(152.4)	3.000(76.2)	0.625(15.9)	1.250(31.8)	13.406(340.5)	0.084°C/W @ 1.5 GPM	0.850 (385.56)
180-10-12C	12.000(304.8)	3.000(76.2)	0.625(15.9)	1.250(31.8)	19.406(429.9)	0.041°C/W @ 1.5 GPM	1.700 (771.12)
180-10-24C	24.000(609.6)	3.000(76.2)	0.625(15.9)	1.250(31.8)	31.406(797.7)	0.020°C/W @ 1.5 GPM	2.900 (1315.4)
180-11-6C	6.000(152.4)	5.000(127.0)	0.688(17.5)	1.813(46.1)	13.688(500.1)	0.084 °C/W @ 1.5 GPM	1.500 (680.40)
180-11-12C	12.000(304.8)	5.000(127.0)	0.688(17.5)	1.813(46.1)	19.688(500.1)	0.041°C/W @ 1.5 GPM	2.867 (1300.47)
180-11-24C	24.000(609.6)	5.000(127.0)	0.688(17.5)	1.813(46.1)	31.688(804.9)	0.020°C/W @ 1.5 GPM	5.730 (2599.13)

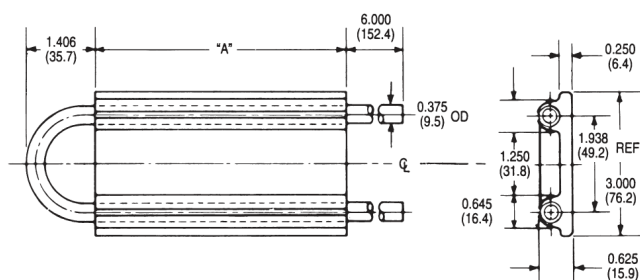
Material: Aluminum, no finish. **Tubing:** Copper (Stainless steel tubing available on special order).

LOCAL THERMAL RESISTANCE PER DEVICE PLATE TO INLET WATER (°C/WATT)

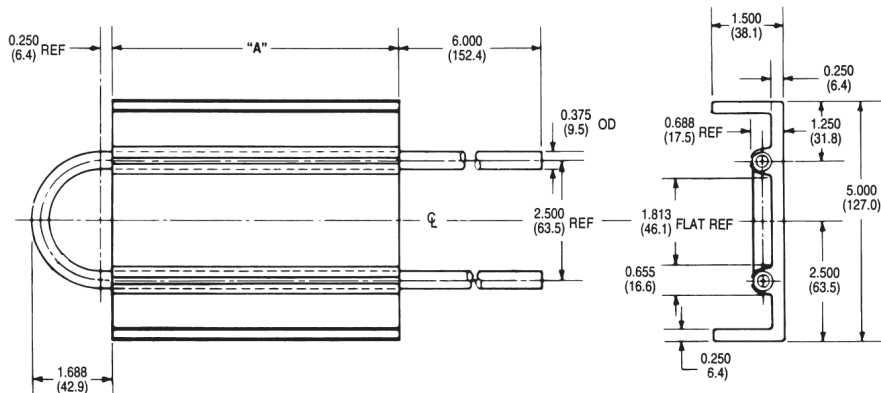
CL to CL Device Spacing Inches	Flow - GPM				
	1/2	1	2	3	4
1.0 (25.4)	0.59	0.52	0.48	0.47	0.46
2.0 (50.8)	0.40	0.36	0.33	0.32	0.31
3.0 (76.2)	0.29	0.26	0.24	0.23	0.22

MECHANICAL DIMENSIONS

180-10 SERIES

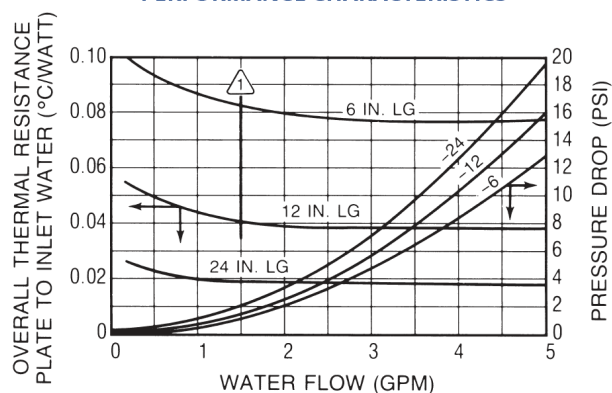


180-11 SERIES

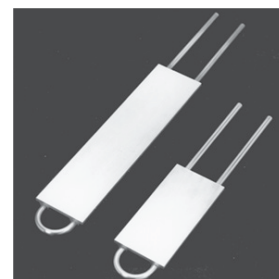


Dimensions: in. (mm)

PERFORMANCE CHARACTERISTICS



Standard P/N	Length "A" in. (mm)
180-10-6C	6.000in. (152.4)
180-10-12C	12.000in. (304.8)
180-10-24C	24.000in. (609.6)
180-11-6C	6.000in. (152.4)
180-11-12C	12.000in. (304.8)
180-11-24C	24.000in. (609.6)



180-12 & 180-20 SERIES

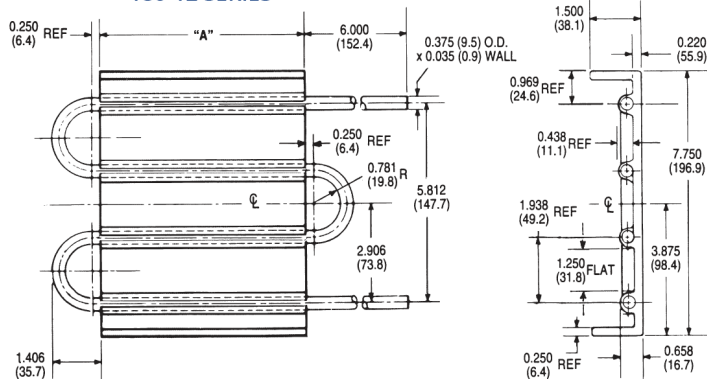
Standard P/N	Cold Plate Body Nominal Dimensions			Mounting Surfaces	Overall Length in. (mm)	Overall Thermal Resistance (Plate to Inlet Water)	Weight lbs. (g)
	Length "A" in. (mm)	Width in. (mm)	Thickness in. (mm)				
180-12-6C	6.000 (152.4)	7.750 (196.9)	0.658 (16.7)	Single	13.406 (340.5)	0.038°C/W @ 1.0 GPM	2.270 (1029.67)
180-12-12C	12.000 (304.8)	7.750 (196.9)	0.658 (16.7)	Single	19.406 (429.9)	0.018°C/W @ 1.0 GPM	4.300 (1950.48)
180-12-24C	24.000 (609.6)	7.750 (196.9)	0.658 (16.7)	Single	31.406 (797.7)	0.009°C/W @ 1.0 GPM	8.600 (3900.96)
180-20-6C	6.000 (152.4)	5.500 (139.7)	0.690 (17.5)	Double	13.125 (333.4)	0.038°C/W @ 1.0 GPM	1.090 (494.42)

LOCAL THERMAL RESISTANCE PER DEVICE PLATE TO INLET WATER (°C/WATT)

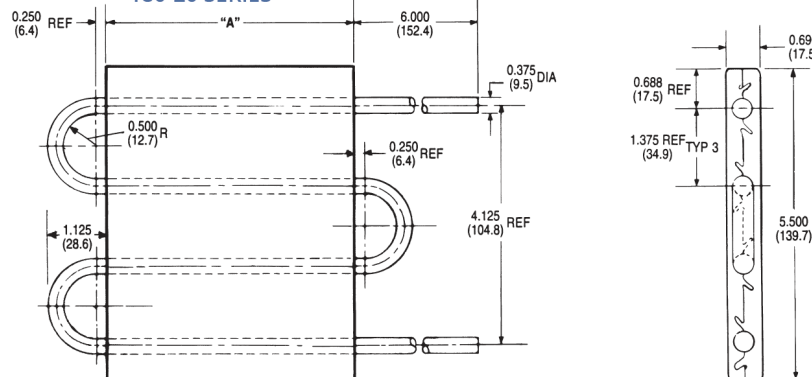
CL to CL Device Spacing Inches	Flow - GPM				
	1/2	1	2	3	4
1.0 (25.4)	0.76	0.67	0.62	0.59	0.57
2.0 (50.8)	0.58	0.49	0.43	0.40	0.39
3.0 (76.2)	0.42	0.34	0.30	0.28	0.27

MECHANICAL DIMENSIONS

180-12 SERIES

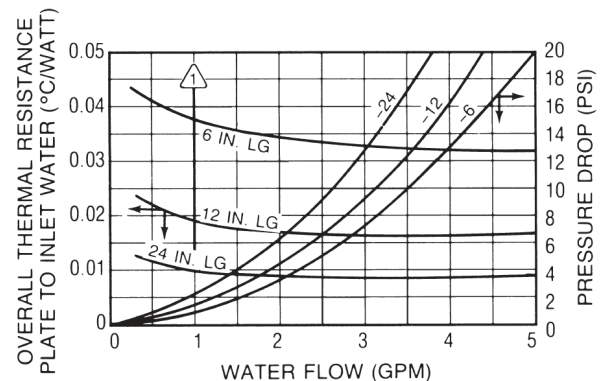


180-20 SERIES



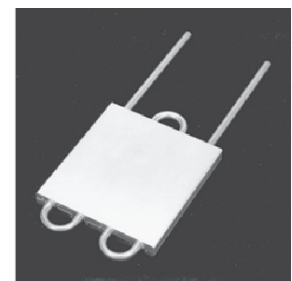
Dimensions: in. (mm)

PERFORMANCE CHARACTERISTICS



△ = RECOMMENDED MAXIMUM FLOW

Standard P/N	Length "A" in. (mm)
180-12-6C	6.000in. (152.4)
180-12-12C	12.000in. (304.8)
180-12-24C	24.000in. (609.6)
180-20-6C	6.000in. (152.4)



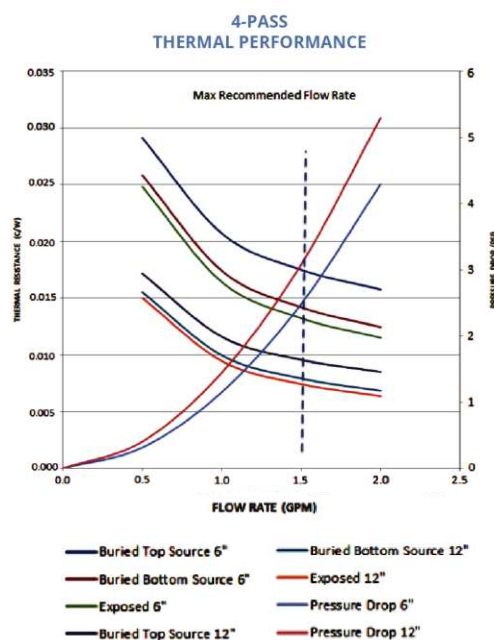
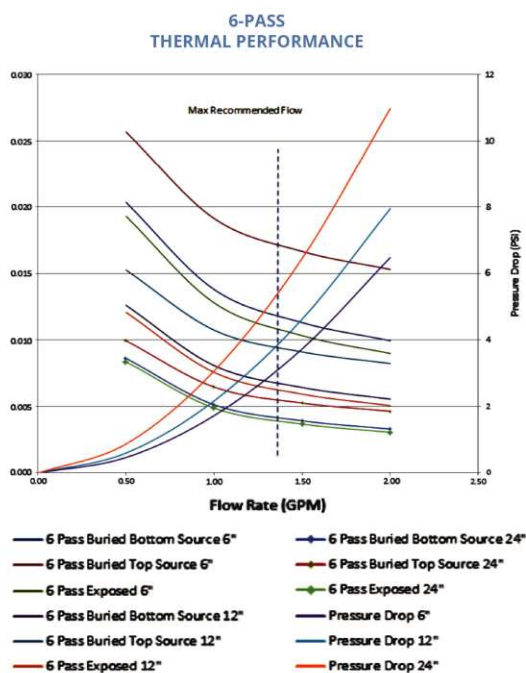
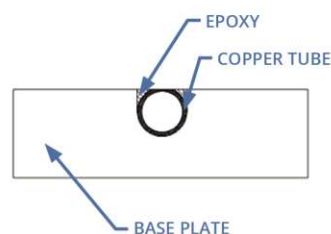
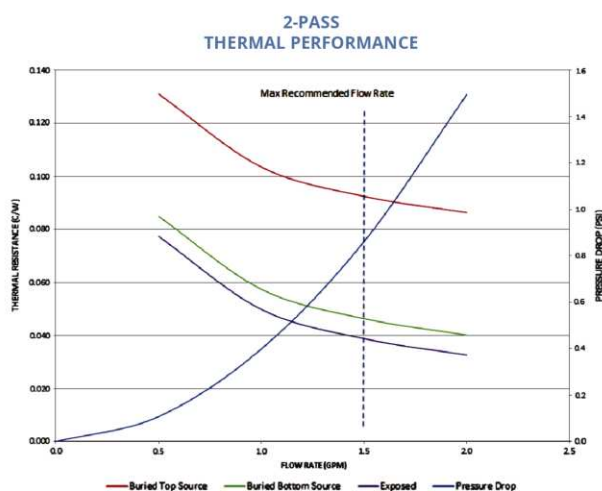
EXPOSED TUBE LIQUID COLD PLATES

Wakefield Thermal exposed tube liquid cold plates ensure minimum thermal resistance between the power device and the cold plate by placing the coolant tube in direct contact with the power device's base. Direct contact reduces the number of thermal interfaces between device and fluid thus increasing performance for the application.

Custom exposed tube liquid cold plates are available, contact Wakefield Thermal for more information.

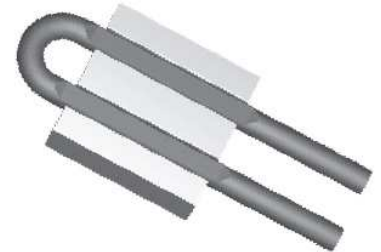
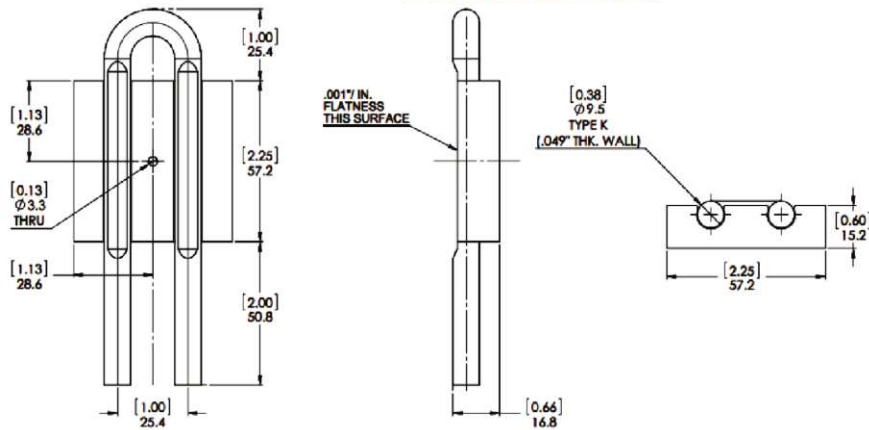
Part Number	Description	"X" Dimension Inches	Passes
120455	Exposed Tube 2- Pass Cold Plate	N/A	2
120456	Exposed Tube 4- Pass Cold Plate	6.00	4
120457	Exposed Tube 4- Pass Cold Plate	12.00	4
120458	Exposed Tube 6- Pass Cold Plate	6.00	6
120459	Exposed Tube 6- Pass Cold Plate	12.00	6
120460	Exposed Tube 6- Pass Cold Plate	24.00	6

KEY SPECIFICATIONS
Base Plate: Extruded Aluminum
Copper Tube Material: 0.375"OD x .049" wall.
Thermal Epoxy fill with high thermal conductivity.



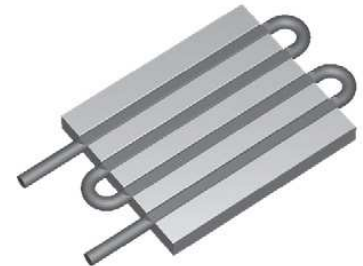
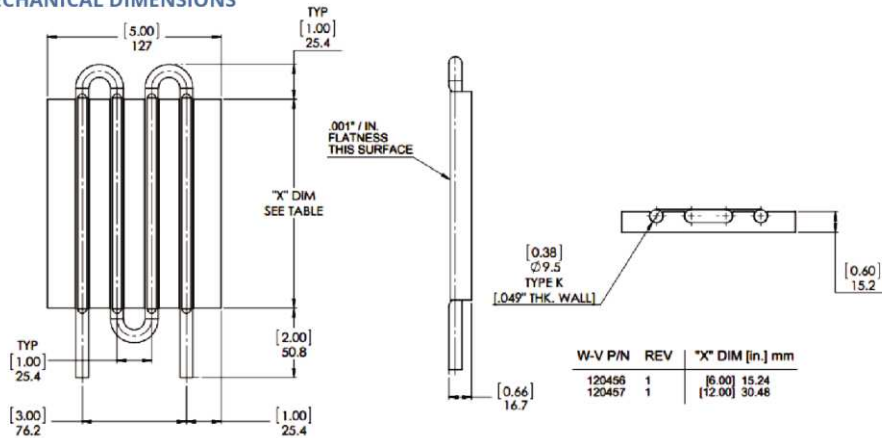
PART NUMBER 120455

MECHANICAL DIMENSIONS



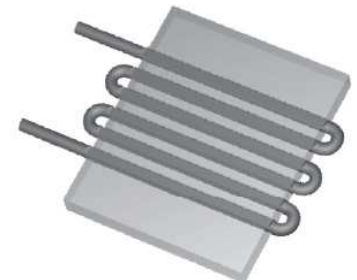
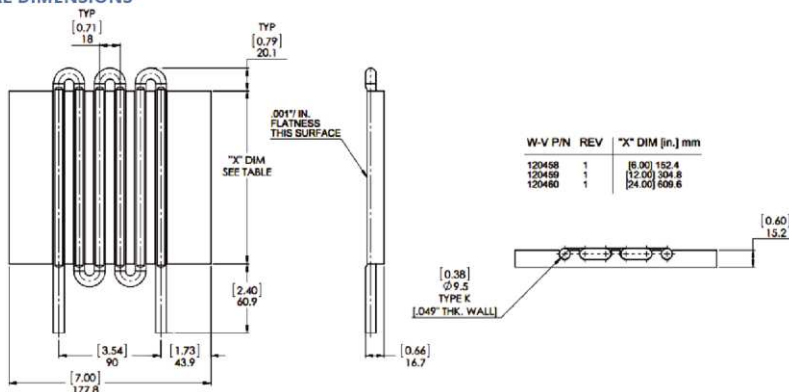
PART NUMBER 120456 & 120457

MECHANICAL DIMENSIONS



PART NUMBER 120458, 120459, & 120460

MECHANICAL DIMENSIONS

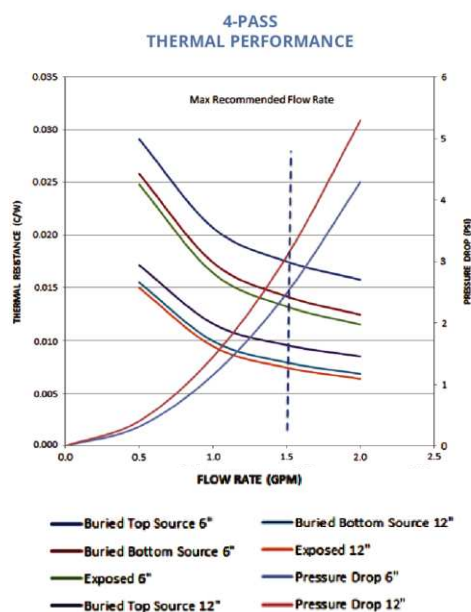
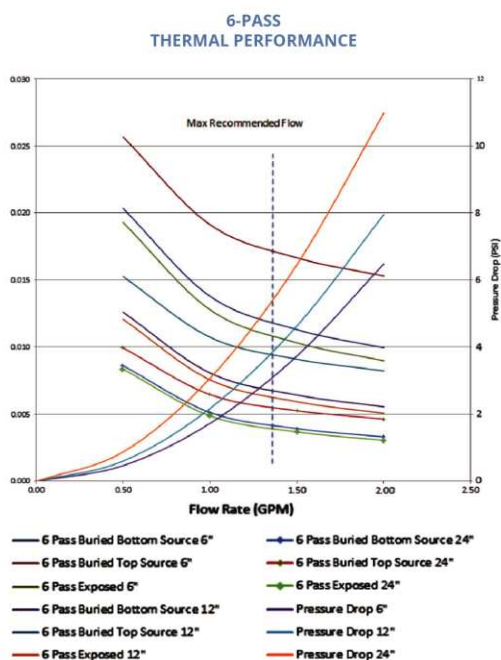
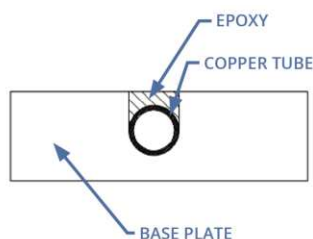
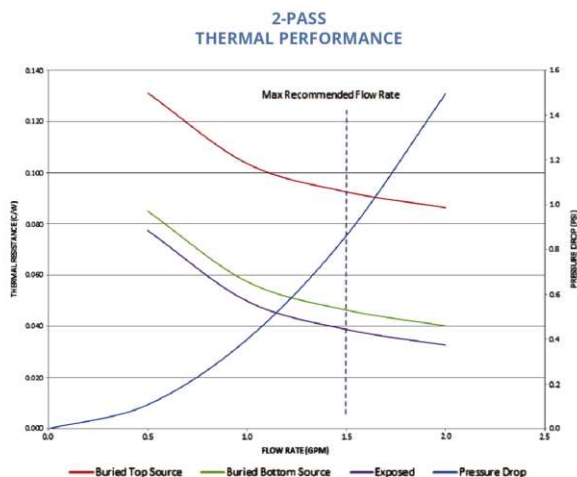


FULL BURIED TUBE LIQUID COLD PLATES

Wakefield Thermal fully buried tube liquid cold plates have the ability to cool both sides of the cold plate because of its positioning within the base plate. Another key feature of the fully buried tube is that it is not exposed to the outside environment. Some engineers prefer the epoxy layer above the tube to protect the tube from leakage. Custom full buried tube liquid cold plates are available, contact Wakefield Thermal for more information.

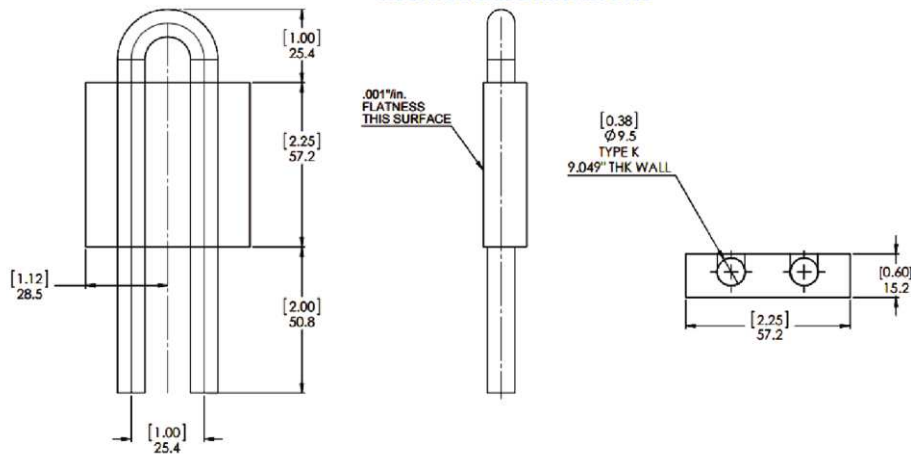
Part Number	Description	"x" Dimension Inches	Passes
120959	Fully Buried Tube 2- Pass Cold Plate	N/A	2
120960	Fully Buried Tube 4- Pass Cold Plate	6.00	4
120961	Fully Buried Tube 4- Pass Cold Plate	12.00	4
120962	Fully Buried Tube 6- Pass Cold Plate	6.00	6
120963	Fully Buried Tube 6- Pass Cold Plate	12.00	6
120964	Fully Buried Tube 6- Pass Cold Plate	24.00	6

KEY SPECIFICATIONS
Base Plate: Extruded Aluminum
Copper Tube Material: 0.375"OD x .049" wall.
Thermal Epoxy fill with high thermal conductivity.



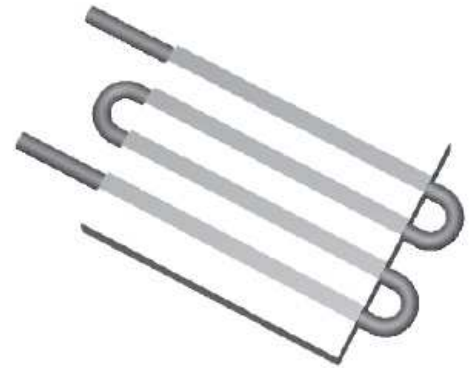
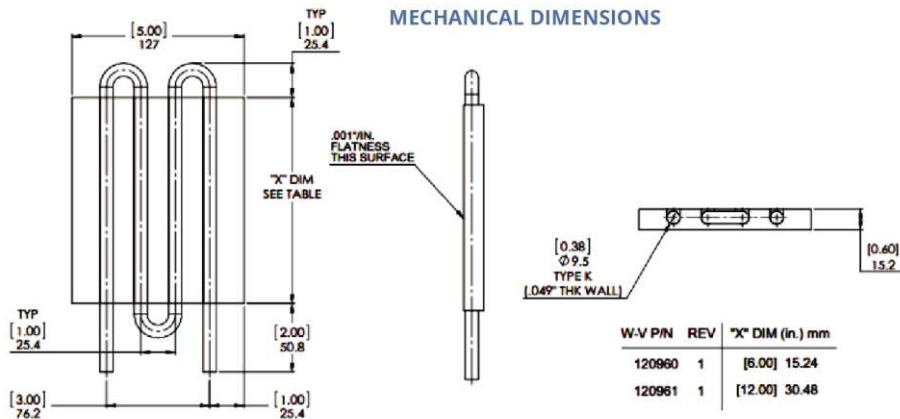
PART NUMBER 120959

MECHANICAL DIMENSIONS



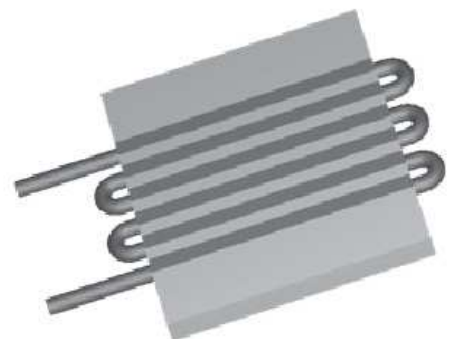
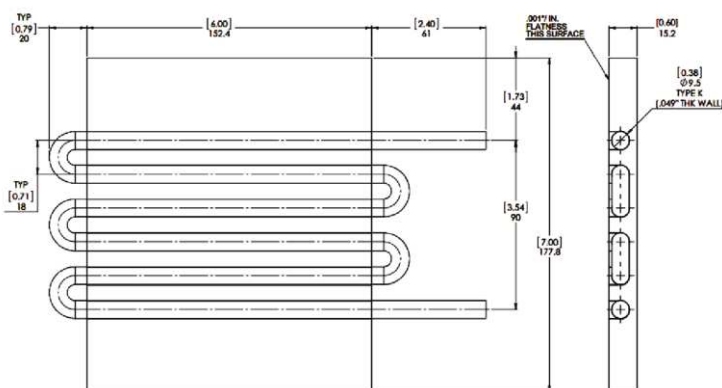
PART NUMBER 120960 & 120961

MECHANICAL DIMENSIONS



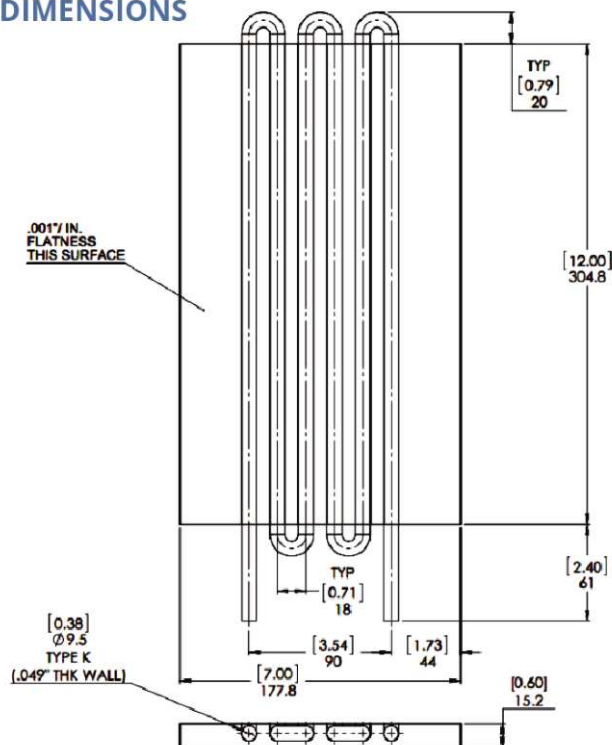
PART NUMBER 120962

MECHANICAL DIMENSIONS



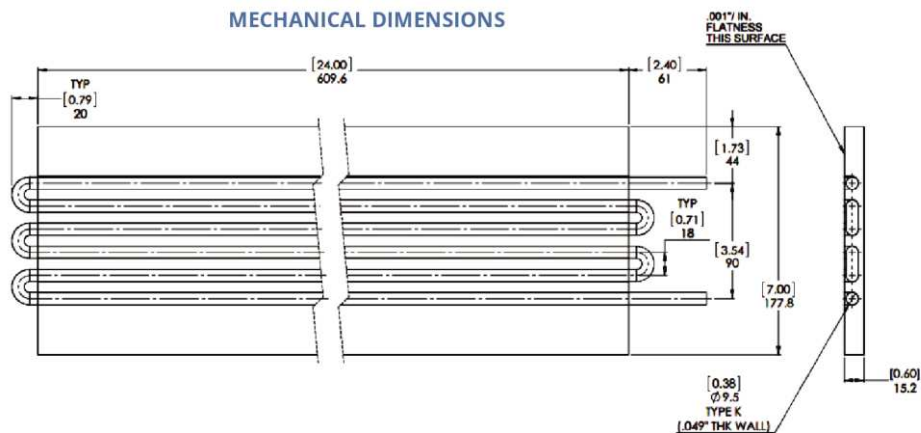
PART NUMBER 120963

MECHANICAL DIMENSIONS



PART NUMBER 120964

MECHANICAL DIMENSIONS



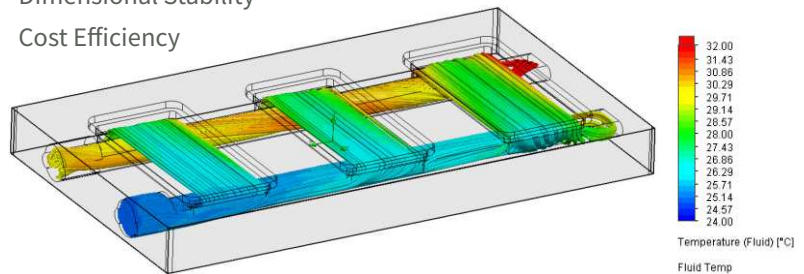
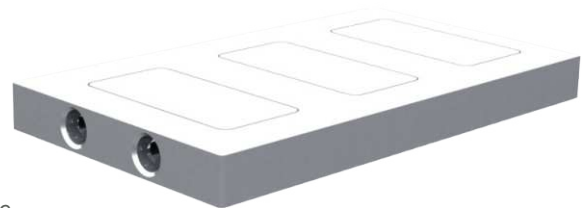
POWER MODULE COOLERS

FRICTION STIR WELDED COLD PLATES

Wakefield Thermal produces a standard Liquid Cold Plate using Friction Stir Welding (FSW). Friction Stir Welding, a solid-state welding method, seamlessly joins two metal pieces without melting them. Leveraging Wakefield Thermal's inhouse Friction Stir Welding capabilities, its products surpass traditional techniques in Cold Plate manufacturing.

FEATURES & BENEFITS

- Compatibility with Dissimilar Metals
- Narrow Heat-Affected Zone
- Environmental Friendliness
- Solid-State Welding
- High Strength Joints
- Fatigue Resistance
- Versatility
- Dimensional Stability
- Cost Efficiency

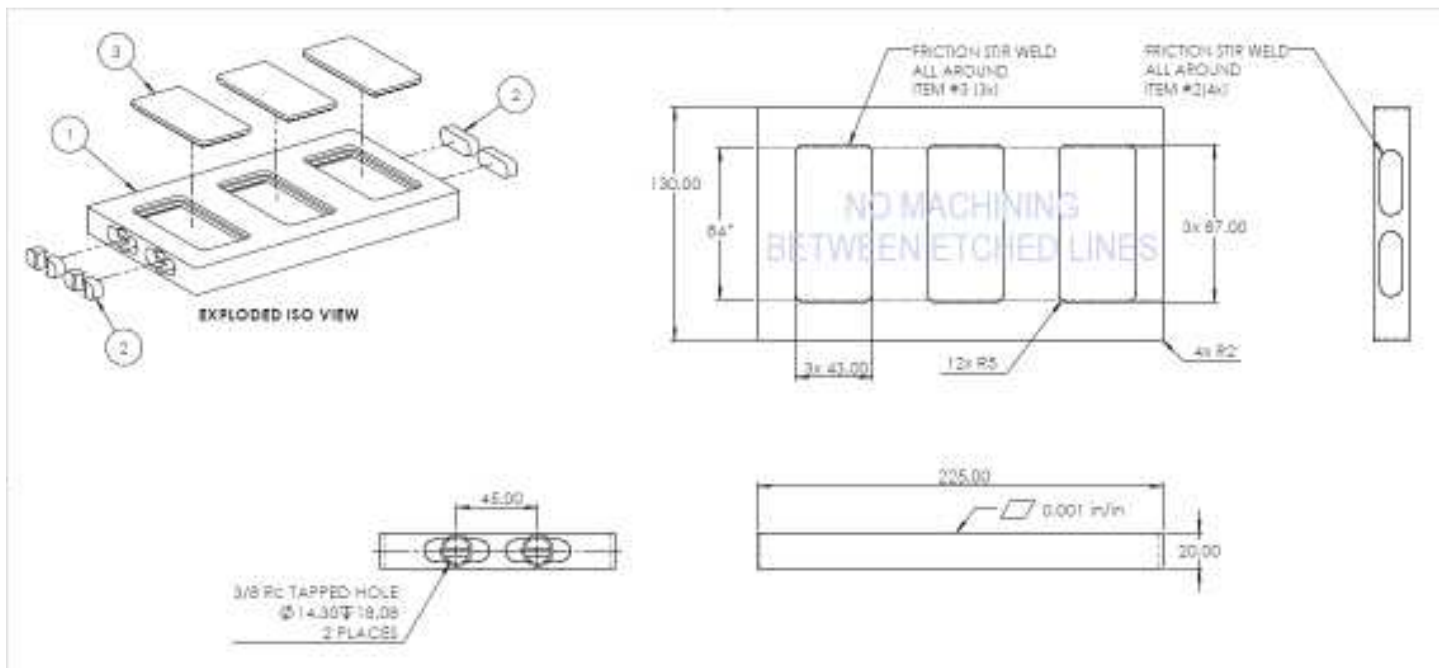


Part #	Description	Overall Dimensions
132814	Friction Stir Welded Cold Plate - 3 IGBT	8.86" L x 5.12" W x 0.79" H

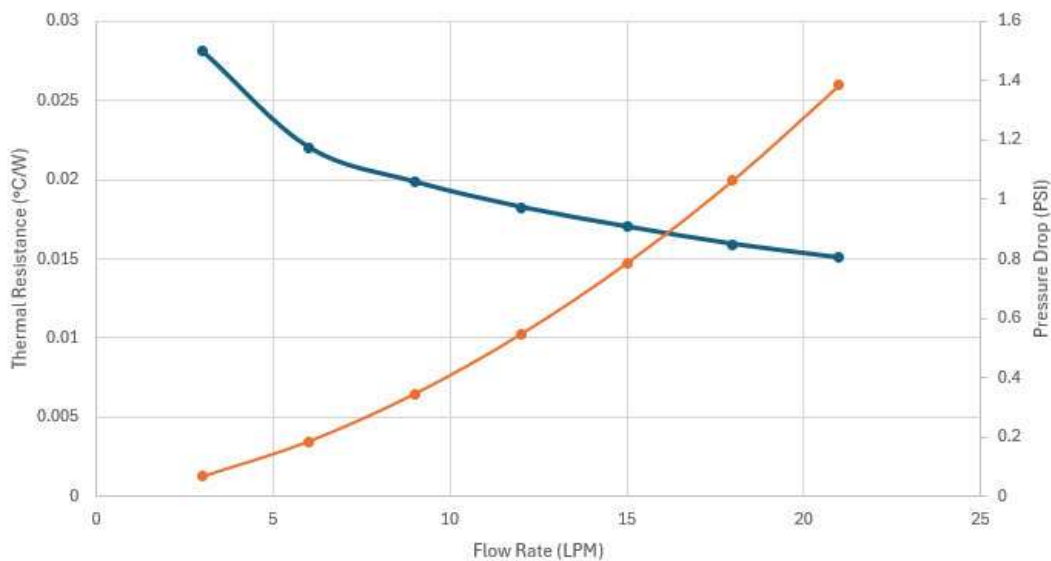
POWER MODULE (IGBT) CROSS-REFERENCES:

- Infineon CoolSiC
- Infineon FF2MR12KM1
- Infineon FF2MR12KM1P
- Infineon FF3MR12KM1
- Infineon FF6MR12KM1
- Infineon FF6MR12KM1P
- Microchip
- Microchip MSCSM120AM02CT6LIAG
- Microsemi SP6LI
- Mitsubishi CMH200DU-24NFH
- Mitsubishi CMH300DU-24NFH
- Semikron SEMITRANS 3
- Semikron SKM125KD12SC
- Semikron SKM260MB170SCH17
- Semikron SKM350MB120SCH15
- Semikron SKM350MB120SCH17
- Semikron SKM500MB120SC
- Wolfspeed CAB760M12HM3
- Wolfspeed CAS120M12BM2
- Wolfspeed CAS300M12BM2
- Wolfspeed CAS300M17BM2
- Wolfspeed CAS325M12HM2
- Wolfspeed CAS480M12HM3
- Wolfspeed WAB300M12BM3
- Wolfspeed WAB400M12BM3

132814



THERMAL CURVES



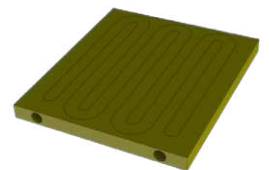
Thermal performance is measured as max plate temp - inlet fluid temp / heat dissipation

FSW COLD PLATES

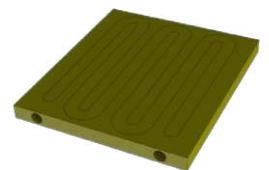
FRICION STIR WELDED (FSW)

Liquid cooling is a natural evolution beyond air cooling where either due to thermal requirements or footprint requirements, the desired performance can no longer be economically met by air cooling.

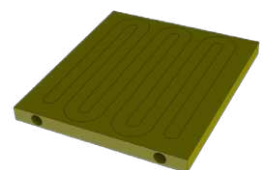
Part #	Description	Overall Dimensions	Thermal Resistance (GPM)	Material
131565	Friction Stir Welded Cold Plate 2 Pass- 3.25"	3.25" L x 2.25" W x .6" H (82.55mm x 57.15mm x 15.24mm)	0.0479 @ 1 GPM	Aluminum



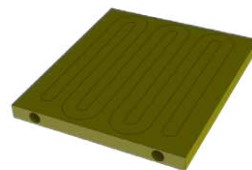
Part #	Description	Overall Dimensions	Thermal Resistance (GPM)	Material
131566	Friction Stir Welded Cold Plate 4 Pass- 8"	8.00" L x 5.00" W x .6" H (203.2mm x 127.0mm x 15.24mm)	0.0154 @ 1 GPM	Aluminum



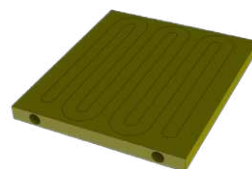
Part #	Description	Overall Dimensions	Thermal Resistance (GPM)	Material
131567	Friction Stir Welded Cold Plate 4 Pass- 14"	14.00" L x 5.00" W x .6" H (355.6mm x 127.0mm x 15.24mm)	0.0106 @ 1 GPM	Aluminum



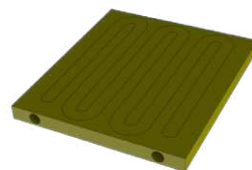
Part #	Description	Overall Dimensions	Thermal Resistance (GPM)	Material
131568	Friction Stir Welded Cold Plate 6 Pass- 8"	8.00" L x 7.00" W x .6" H (203.2mm x 177.8mm x 15.24mm)	0.0121 @ 1 GPM	Aluminum



Part #	Description	Overall Dimensions	Thermal Resistance (GPM)	Material
131569	Friction Stir Welded Cold Plate 6 Pass- 14"	14.00" L x 7.00" W x .6" H (355.6mm x 177.8mm x 15.24mm)	0.0087 @ 1 GPM	Aluminum



Part #	Description	Overall Dimensions	Thermal Resistance (GPM)	Material
131570	Friction Stir Welded Cold Plate 6 Pass-26"	26.00" L x 7.00" W x .6" H (660.4mm x 177.8mm x 15.24mm)	0.0063 @ 1 GPM	Aluminum

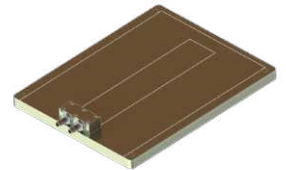


HIGH PERFORMANCE

LIQUID COLD PLATES FOR HIGH-PERFORMANCE SYSTEMS

Wakefield Thermal's vacuum-brazed liquid cold plates are created by machining two metal plates with interior channels and fin structures (zipper fin), which are then carefully sealed together inside a vacuum chamber. A filler metal with a lower melting point is melted into the joints of the cold plate via capillary action. The vacuum created in the chamber removes the atmosphere, thus preventing the forming of oxides that would normally form during the brazing process. Without the vacuum, a flux would be required to protect the joints as they are formed. The vacuum-brazing process creates an exceptionally strong joint and does not require any brazing flux. The vacuum-brazed cold plate has unparalleled flexibility in its design, as it is not limited by the bending radius limitations of Wakefield Thermal's standard tube and plate cold plates.

Part #	Overall Dimensions	Thermal Performance	Weight	Series
131097	300mm X 240mm X 34.5mm	0.007°C/W @ 4 LPM (1.4PSI Drop)	2.1kg	Vacuum Brazed



ON-CHIP LIQUID COOLING FOR AI & HYPERSCALE DATA CENTERS

OPTIMIZED FOR NEXT-GEN INTEL XEON PLATFORMS (EAGLE STREAM)

Designed for Intel Eagle Stream platforms, this on-chip liquid cooling solution supports 4th and 5th Gen Intel Xeon scalable processors, delivering efficient thermal management for high-performance computing and AI workloads.

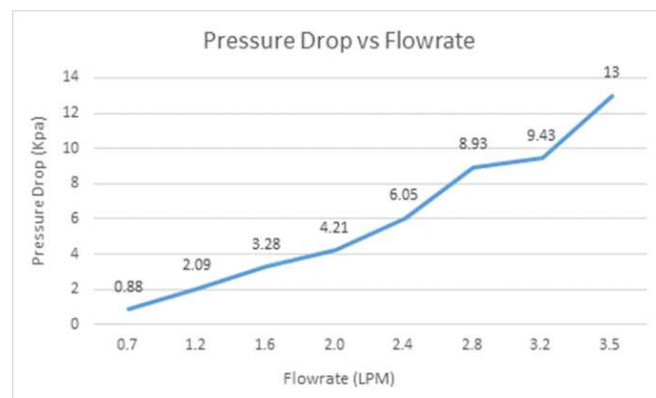
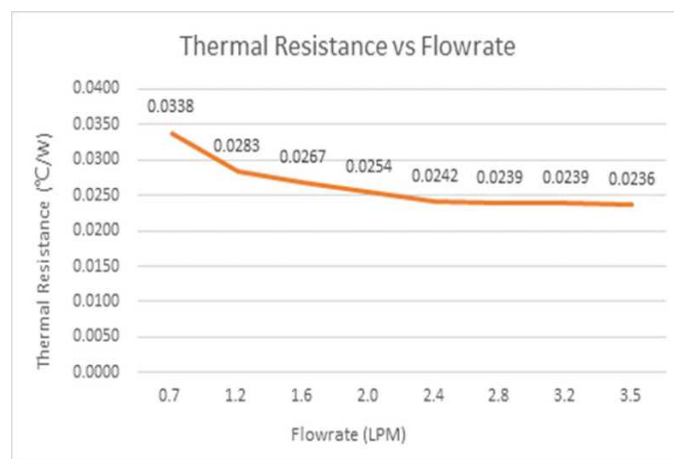
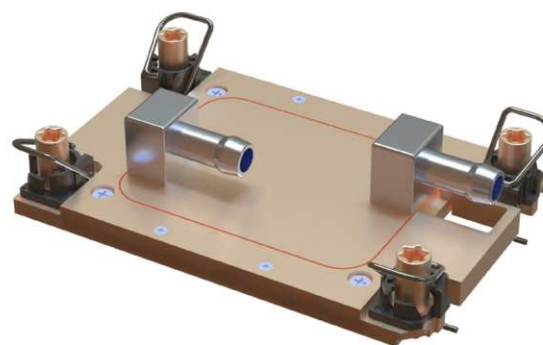
Product Specifications	
Overall Size	117.5mm*77.5mm*26mm
Inlet/Outlet Ports	Ø10mm OD hose barb
Mass	1.5kg
Construction Method	vacuum brazed
Attachment Method	Intel version 2 EGS fasteners

Recommendations	
Fluid Type	"Deionized water or 50/50 Coolant"
Operating Temp. Range	-40 to 100°C
Flow Rate	0-3.5 LPM

Test Parameters	
CPU Power	385 W
Ambient Temperature	25°C
Inlet Water Temperature	45°C
Max. Operating Pressure	0.6 MPa
Flow Rate	1.6 LPM

Results	
Tcase	55.4°C
Thermal Resistance	0.0267°C/W
Water Temp. Change	+3.5°C

Key Benefits	
Supports high-power CPUs up to 385W TDP	
Enables higher rack density for AI and HPC workloads	
Maintains low thermal resistance (0.0267°C/W) for sustained performance	



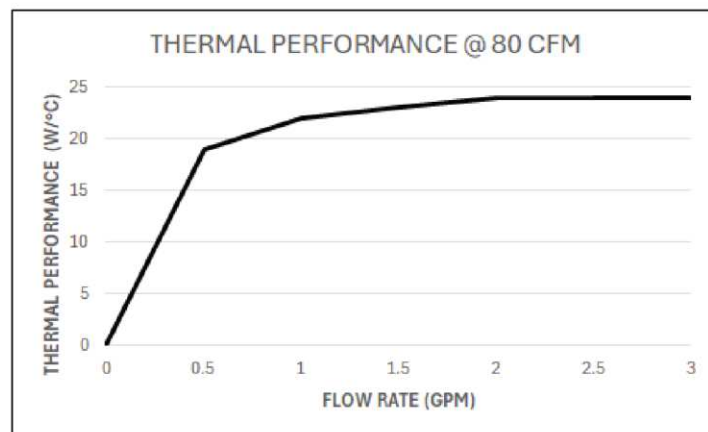
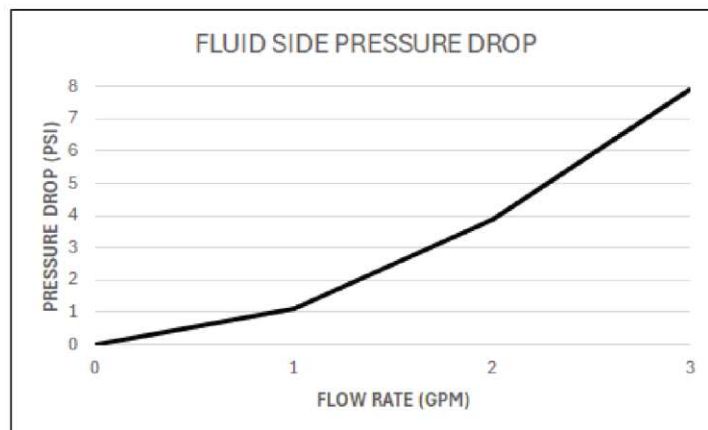
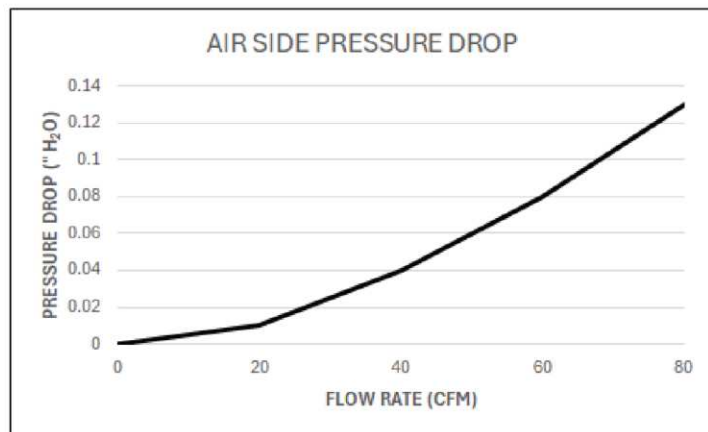
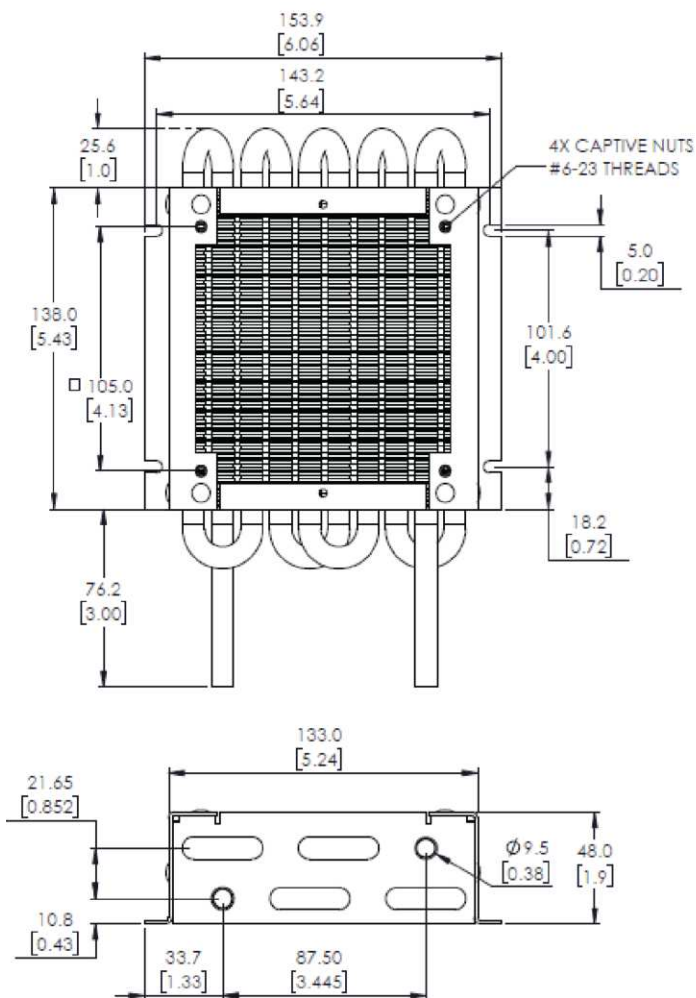
HYDRO-AIR SERIES HEAT EXCHANGERS

Wakefield's HYDRO-AIR Series of Liquid to Air Heat Exchangers are designed for up to 18kW of heat transfer capacity. Offered with options for single or dual fans, aluminum or copper fins, copper tubes and aluminum chassis, they are capable of handling high power densities in low space applications. Our standard offerings include copper tubes 0.032" thick, 0.0055" thick fins and all aluminum chassis. Custom options available upon request.

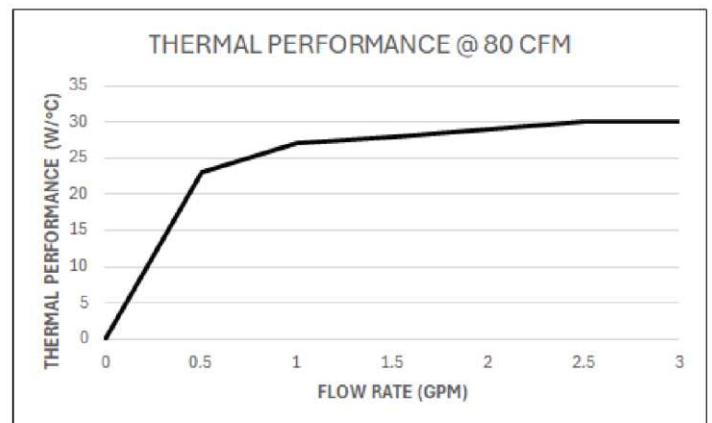
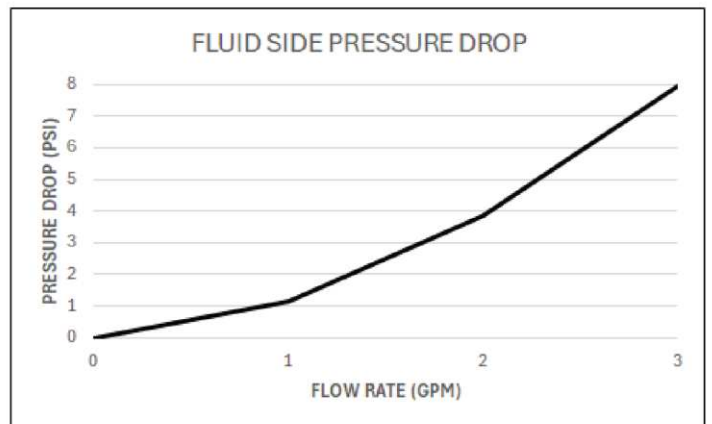
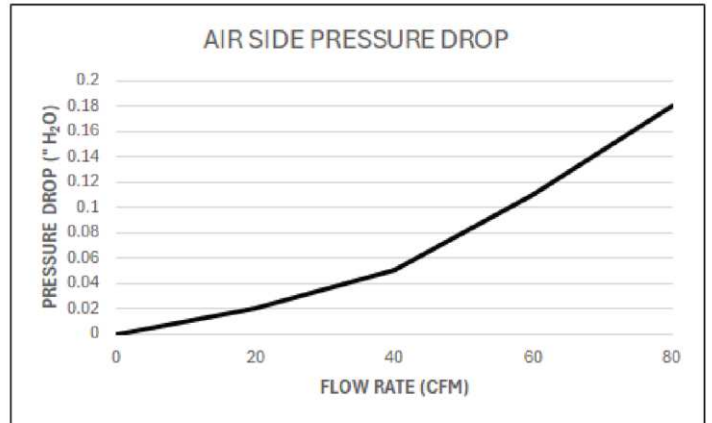
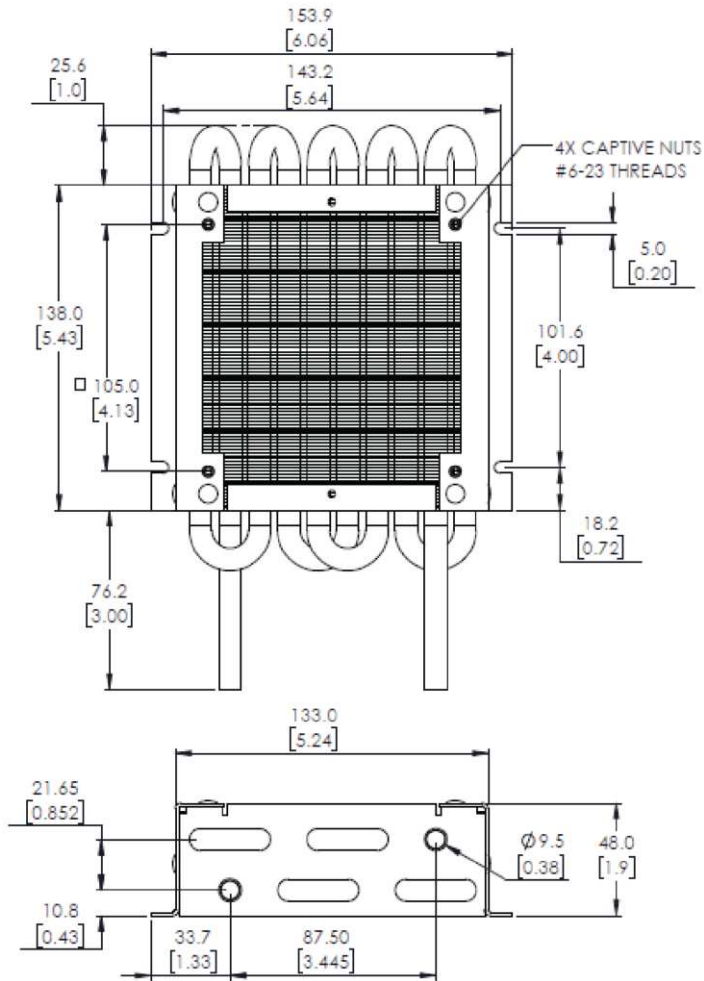


WFV PN	Overall Size		Fan Data		Fin Data		Tube Spacing (in)
	Metric (mm)	Standard (in)	Qty.	Size (mm)	Material	Density (FPI)	
124920	138x133x48	5.43x5.24x1.89	1	120	AL	12	0.5x0.56
124921	138x133x48	5.43x5.24x1.89	1	120	AL	18	0.5x0.56
124922	138x133x48	5.43x5.24x1.89	1	120	CU	12	0.5x0.56
124923	138x133x48	5.43x5.24x1.89	1	120	CU	18	0.5x0.56
124924	260x133x48	10.24x5.24x1.89	2	120	AL	12	0.5x0.56
124925	260x133x48	10.24x5.24x1.89	2	120	AL	18	0.5x0.56
124926	260x133x48	10.24x5.24x1.89	2	120	CU	12	0.5x0.56
124927	260x133x48	10.24x5.24x1.89	2	120	CU	18	0.5x0.56
124928	241x208x66	9.49x8.19x2.60	1	152	AL	12	0.5x0.56
124929	241x208x66	9.49x8.19x2.60	1	152	AL	18	0.5x0.56
124983	241x208x66	9.49x8.19x2.60	1	152	CU	12	0.5x0.56
124984	241x208x66	9.49x8.19x2.60	1	152	CU	18	0.5x0.56
124985	444x208x66	17.48x8.19x2.60	2	152	AL	12	0.5x0.56
124986	444x208x66	17.48x8.19x2.60	2	152	AL	18	0.5x0.56
124987	444x208x66	17.48x8.19x2.60	2	152	CU	12	0.5x0.56
124988	444x208x66	17.48x8.19x2.60	2	152	CU	18	0.5x0.56

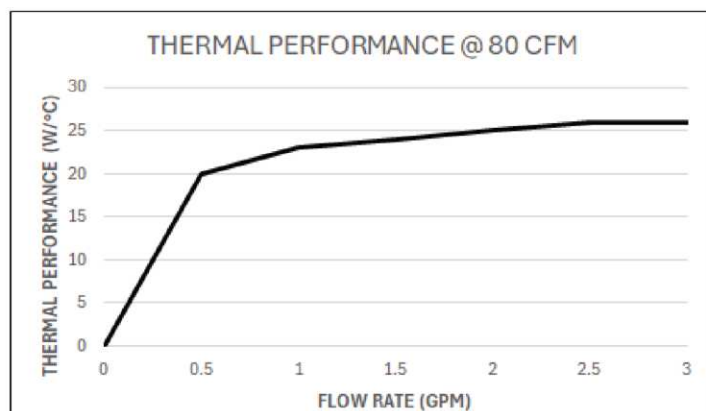
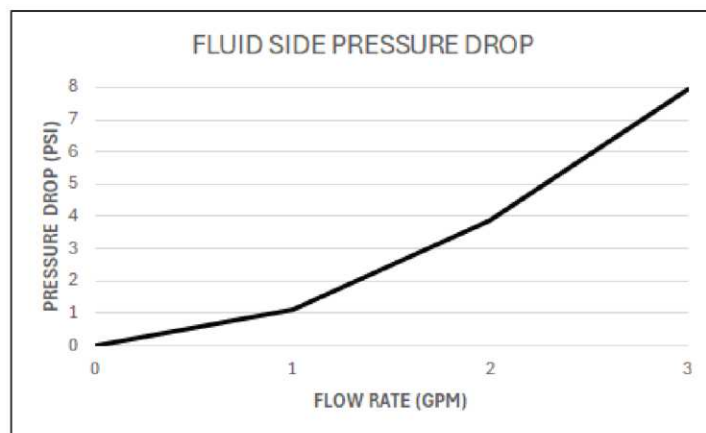
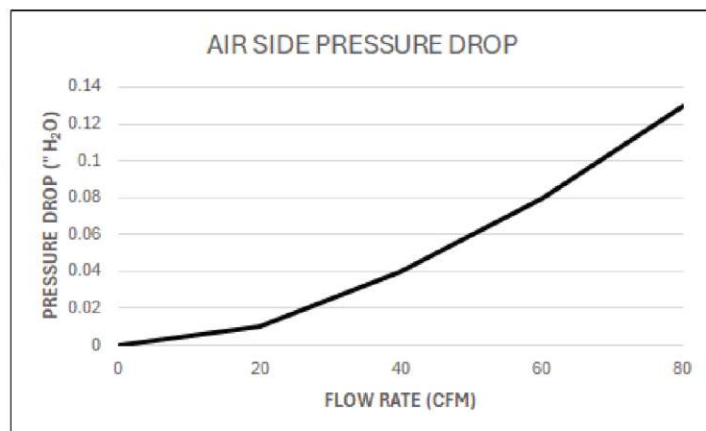
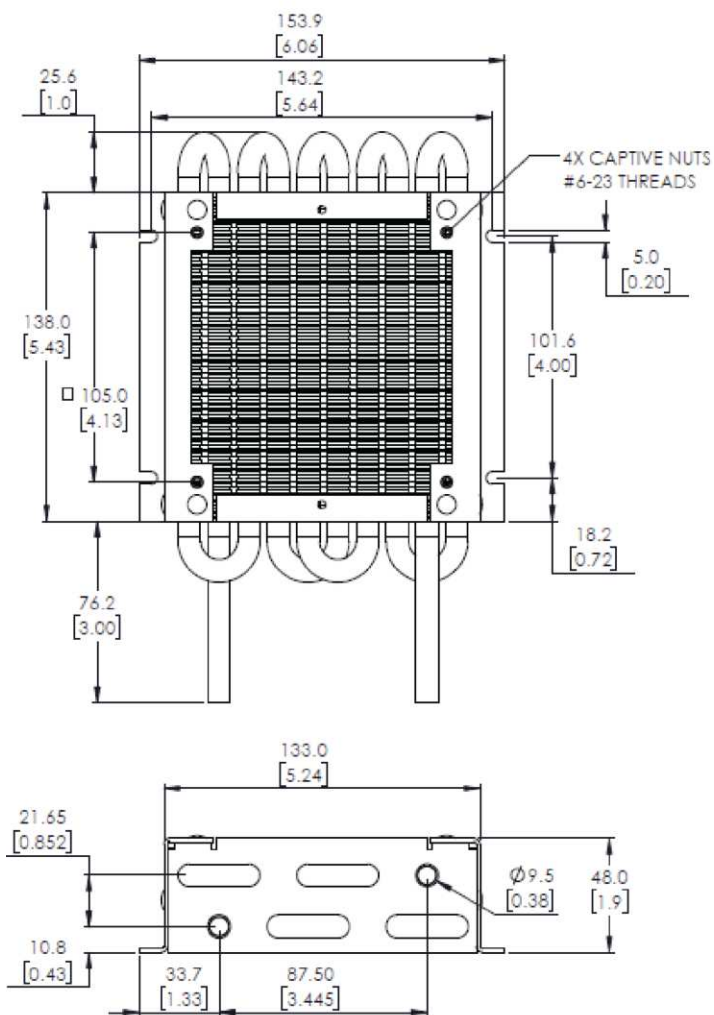
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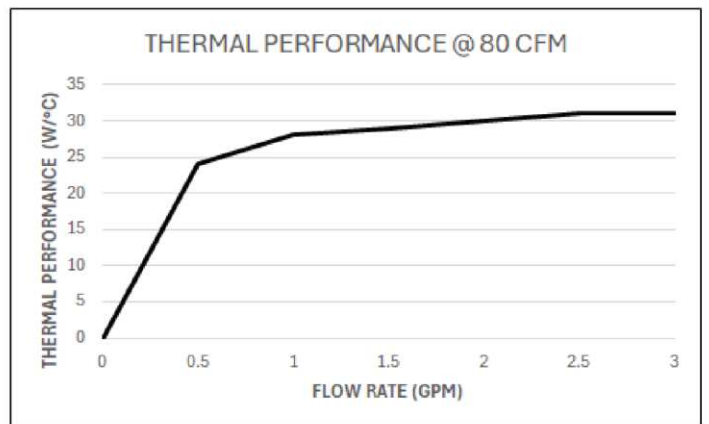
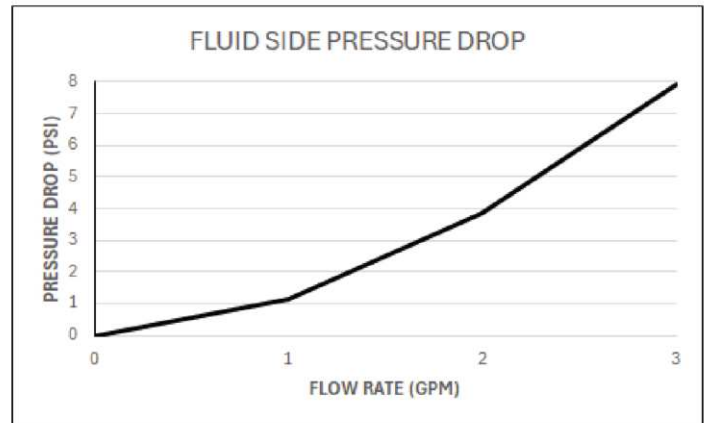
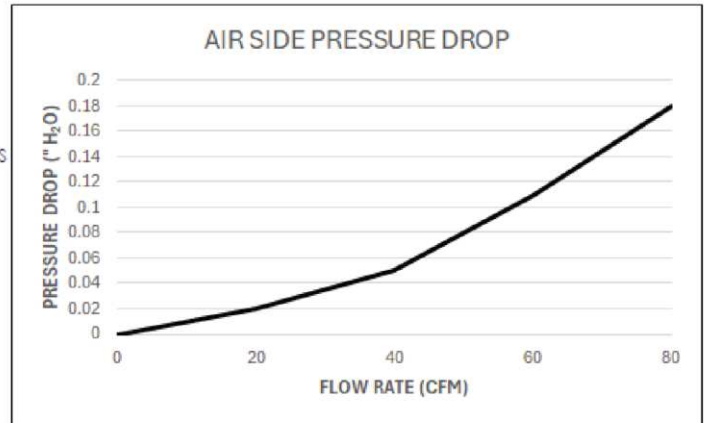
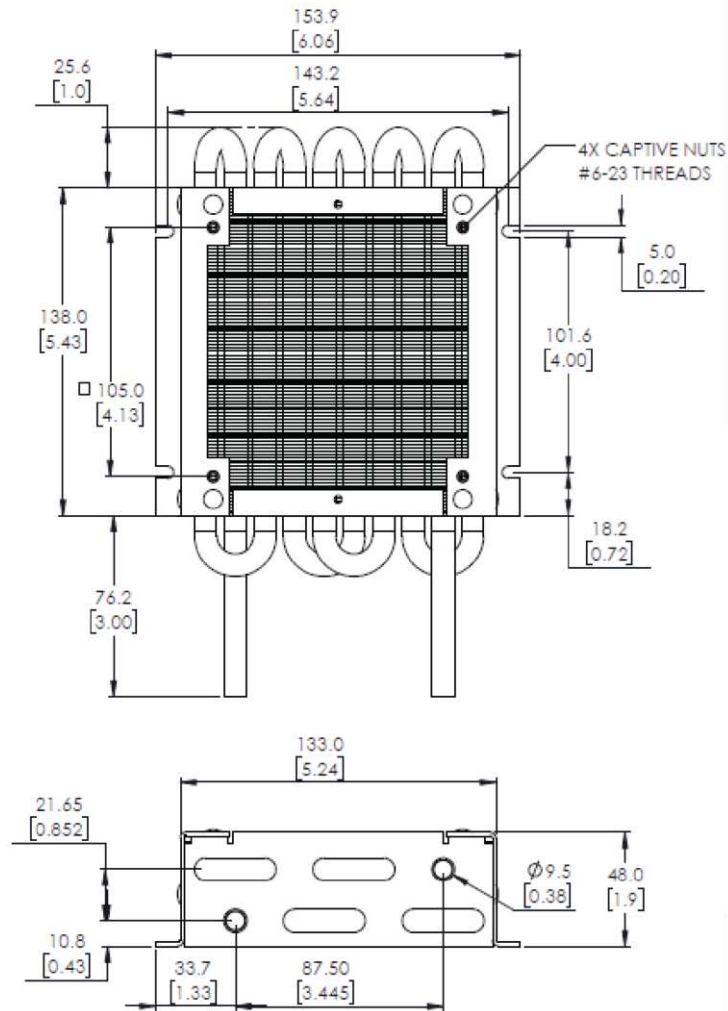
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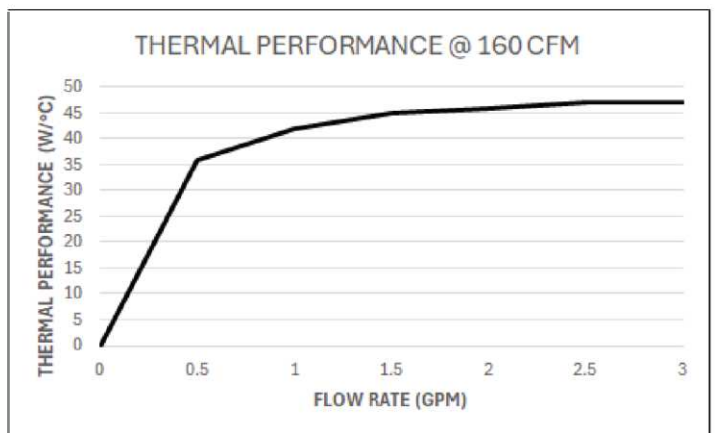
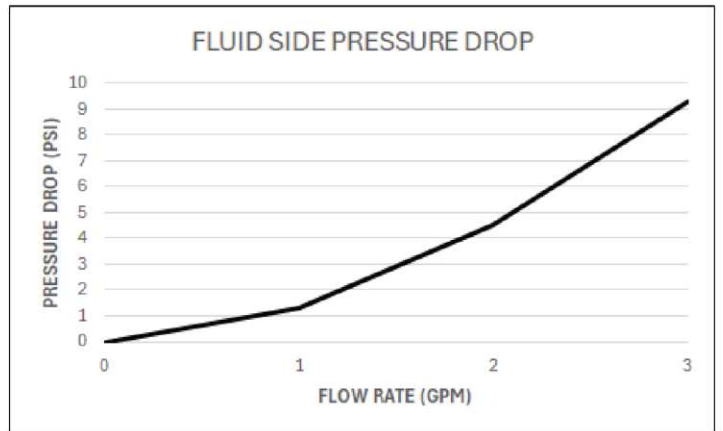
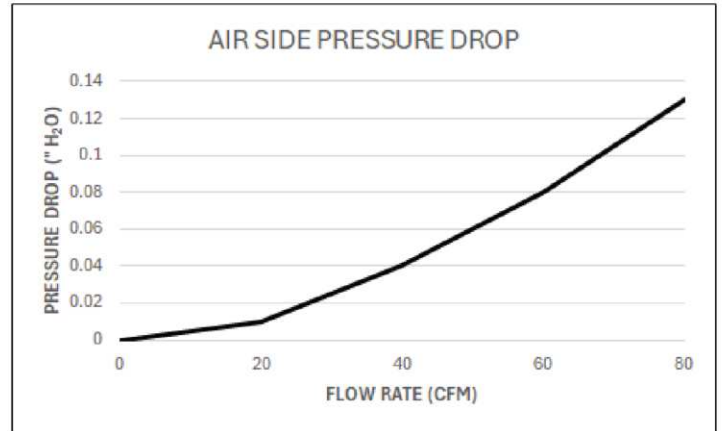
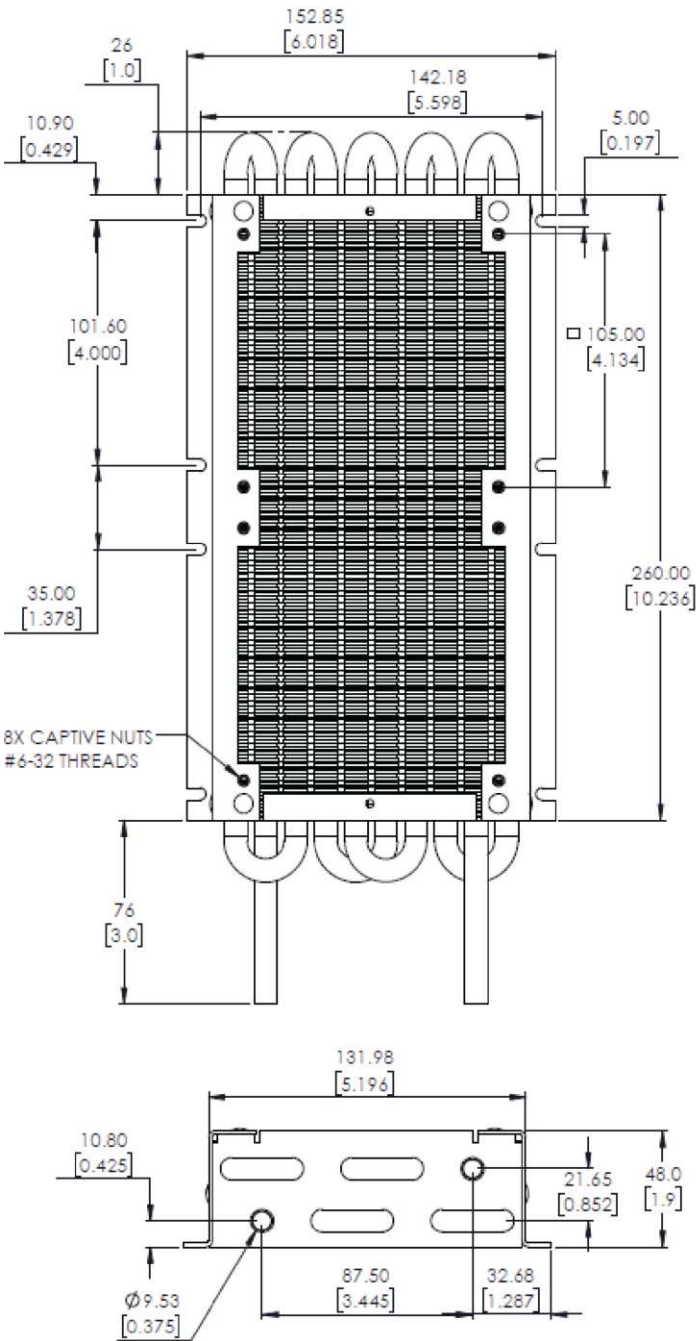
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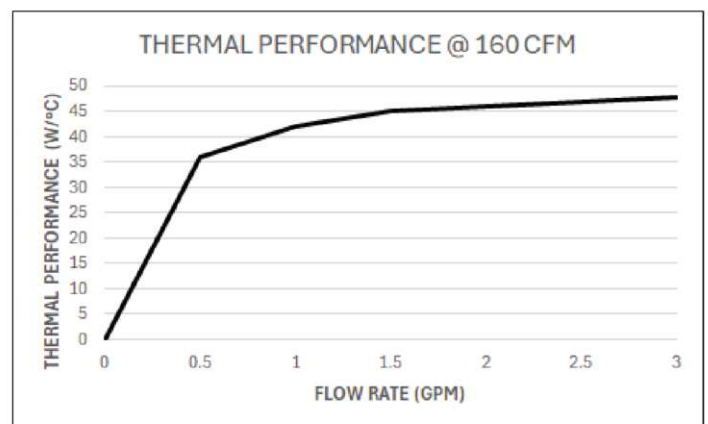
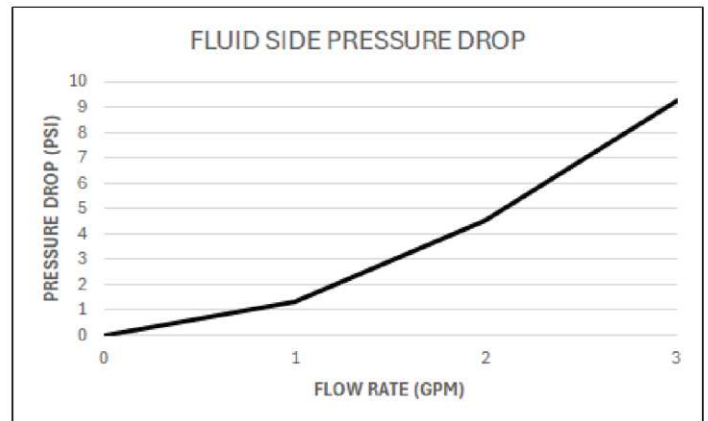
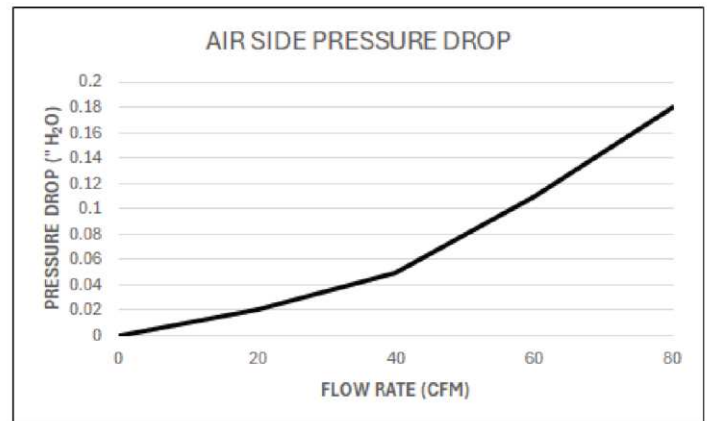
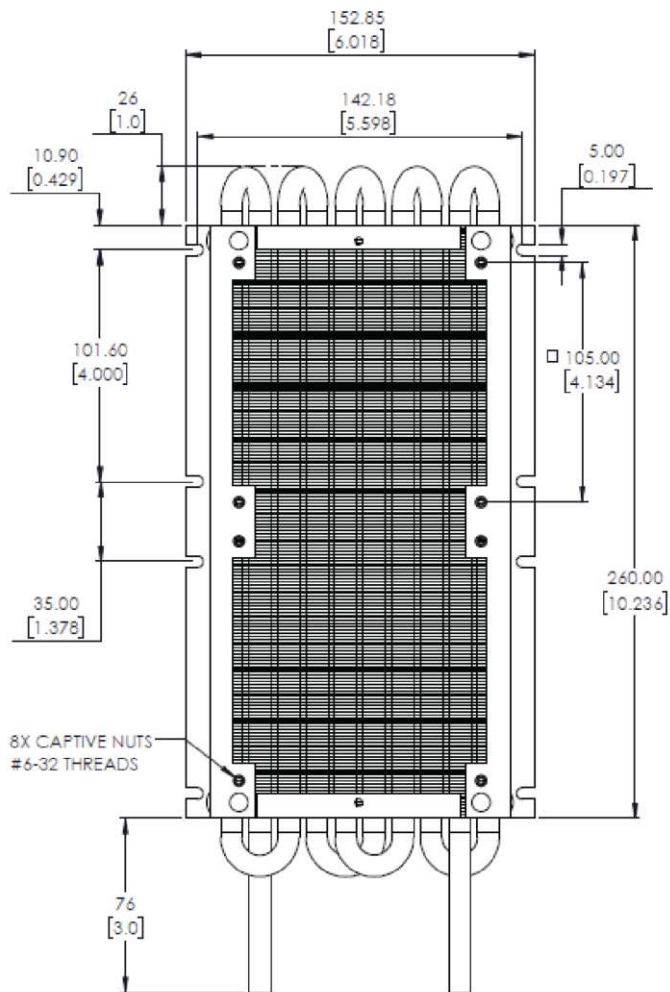
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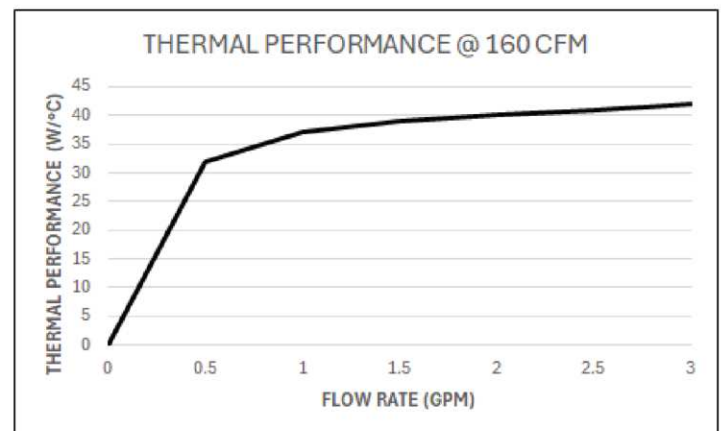
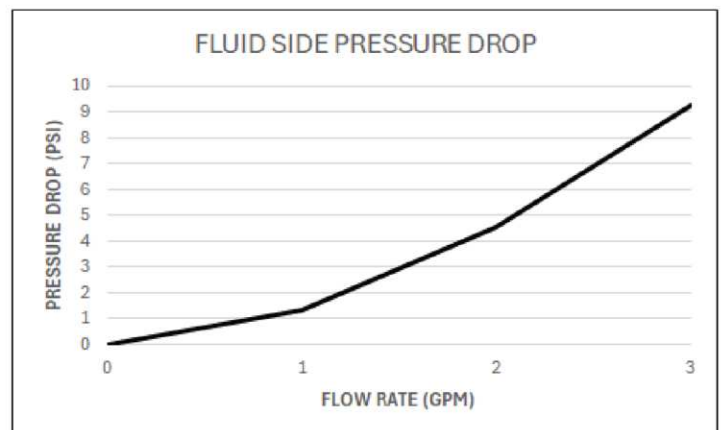
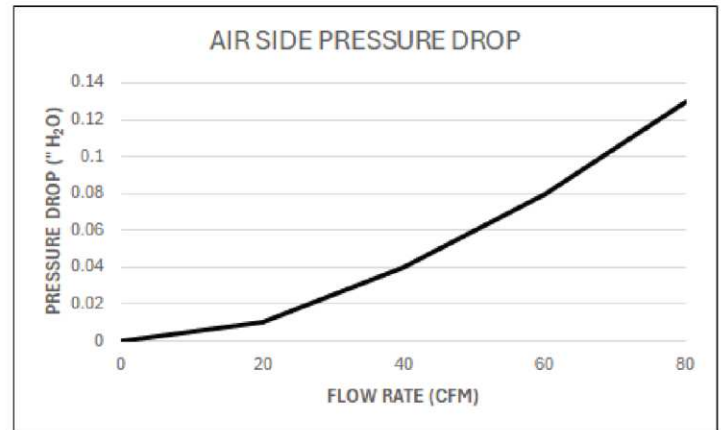
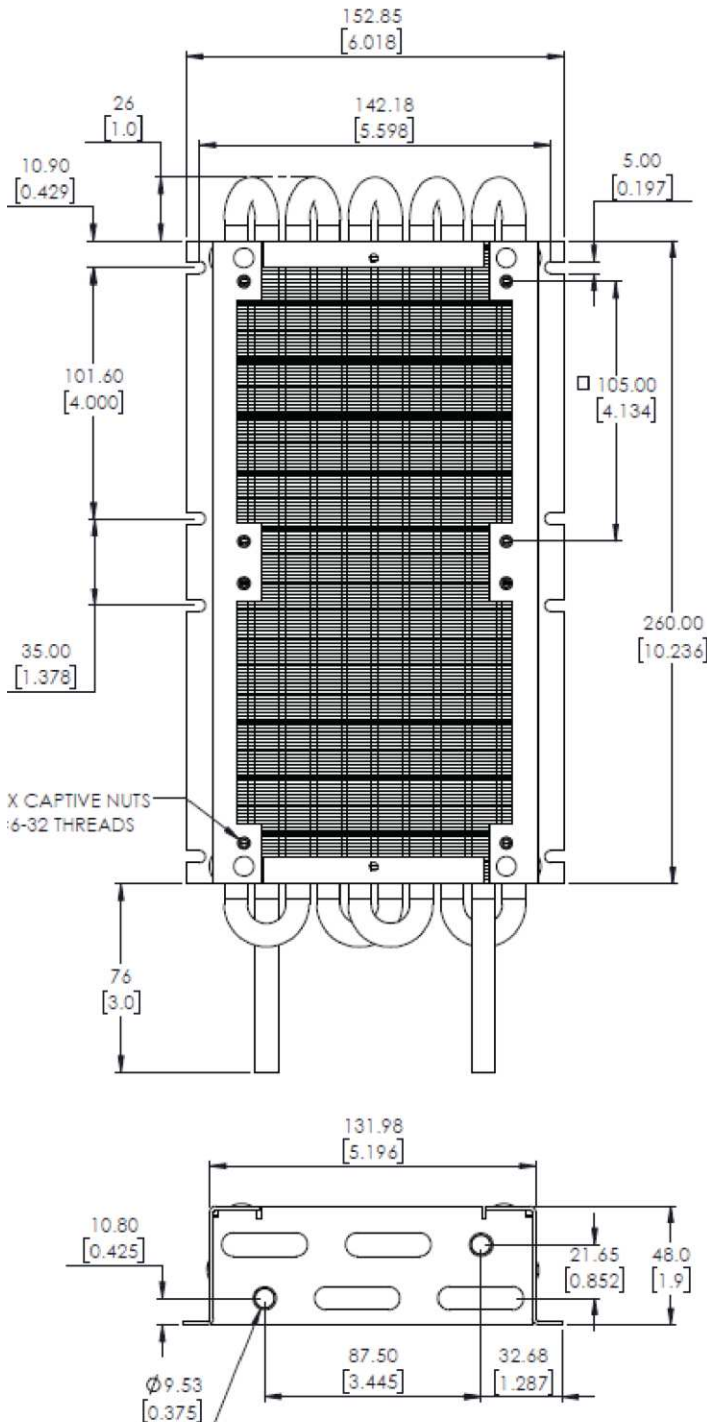
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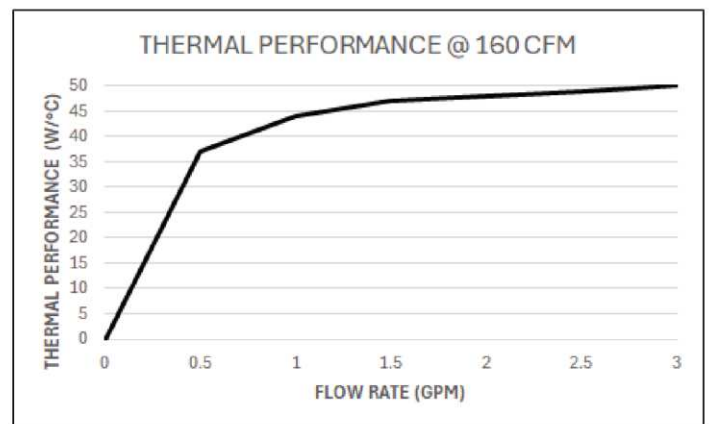
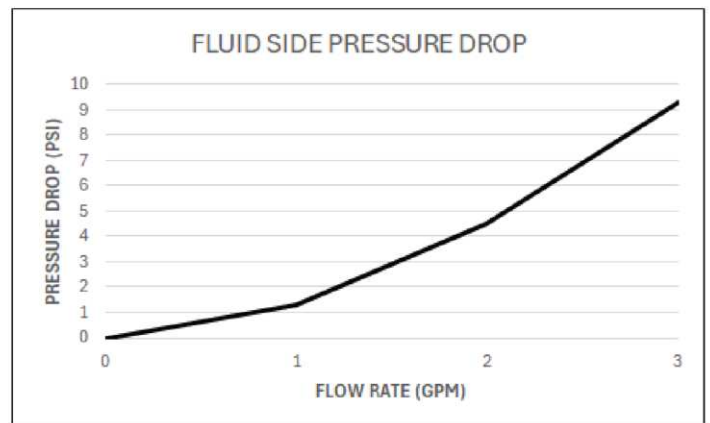
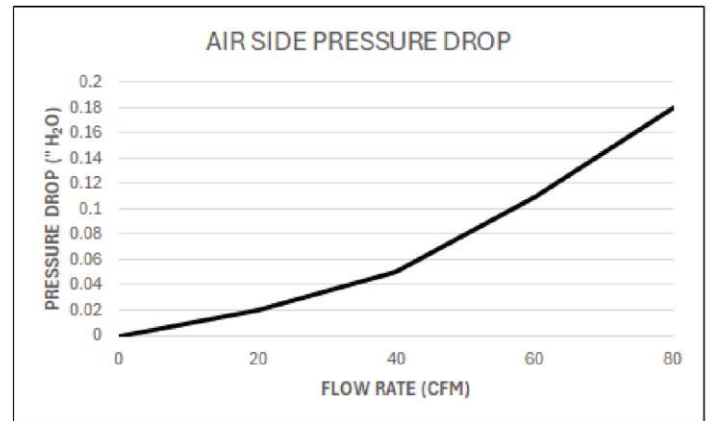
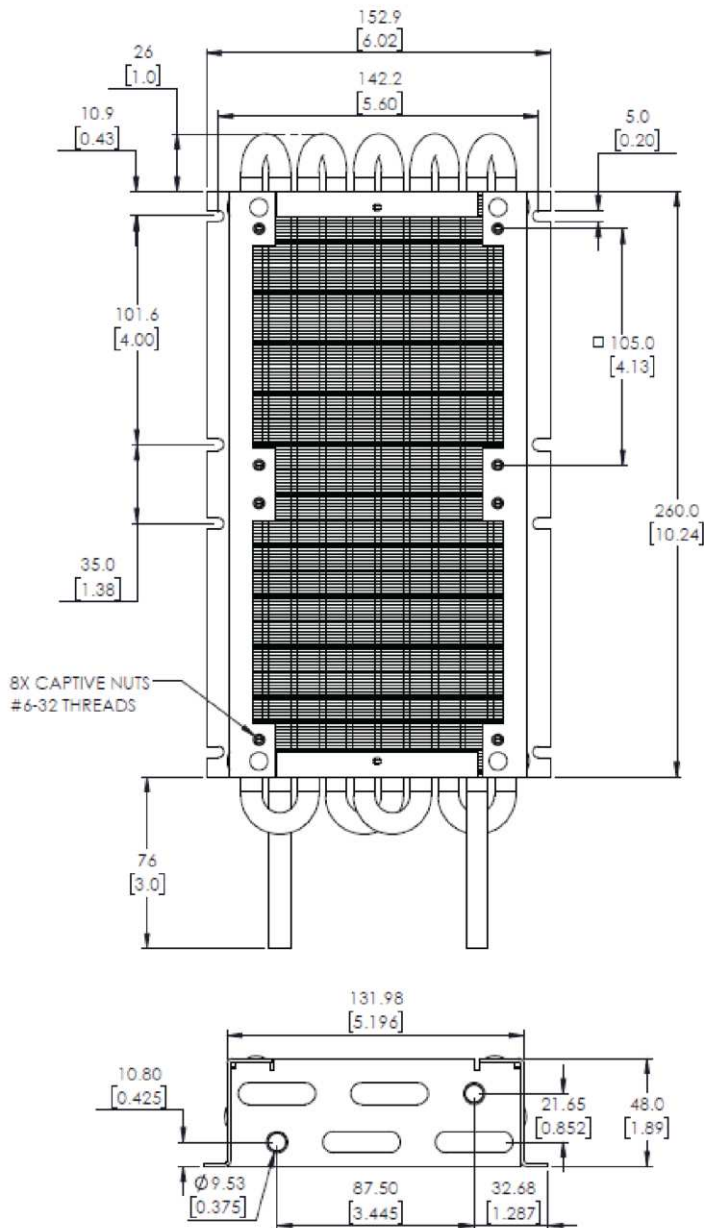
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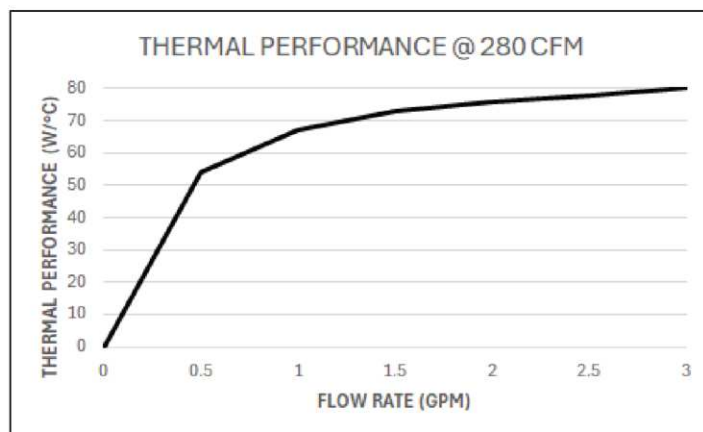
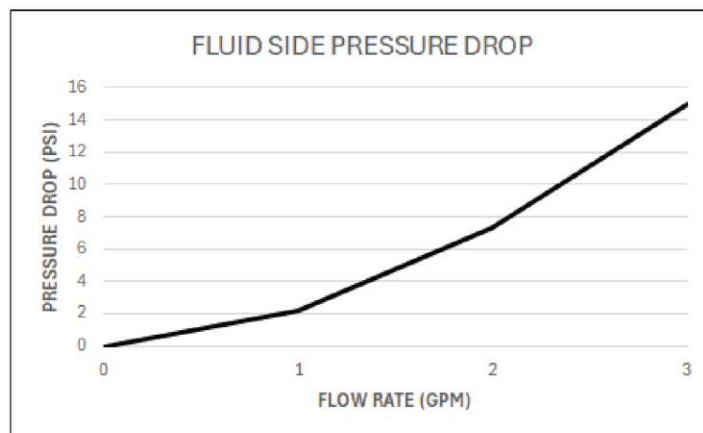
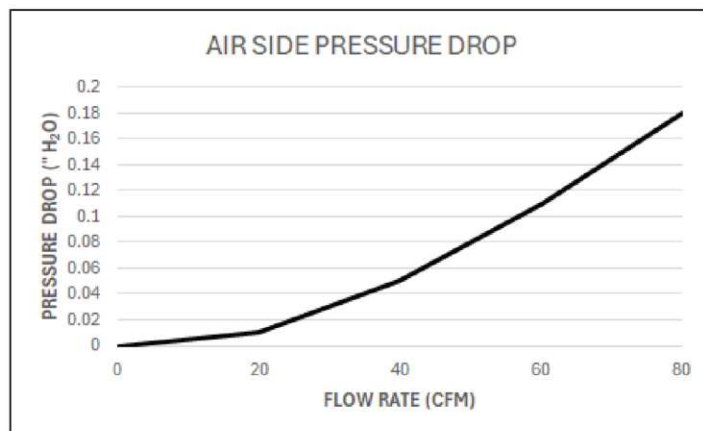
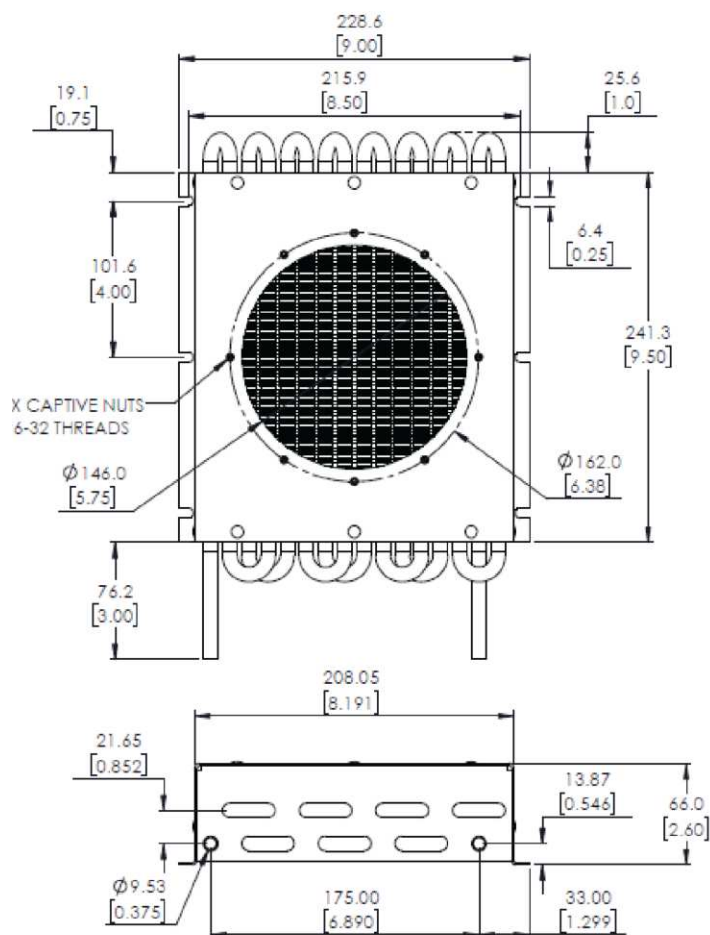
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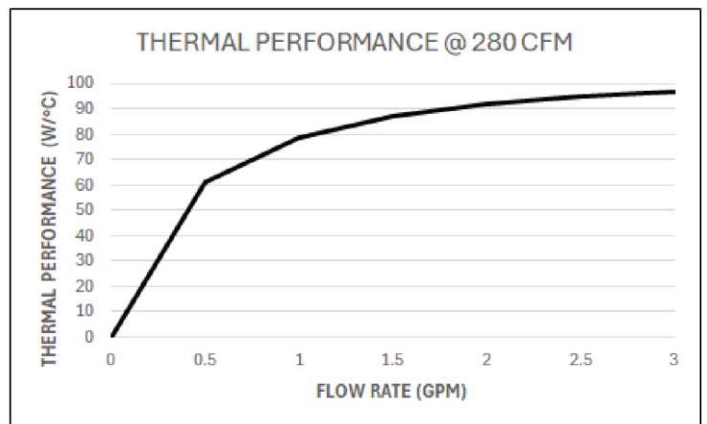
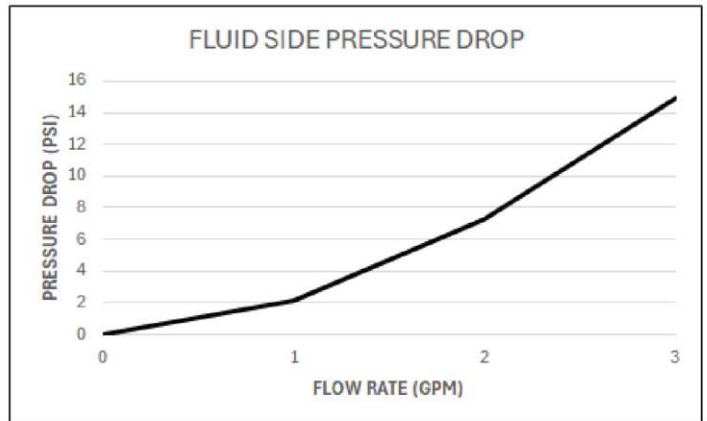
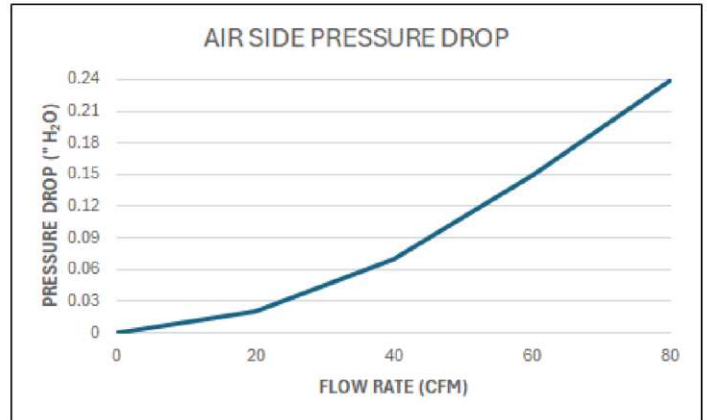
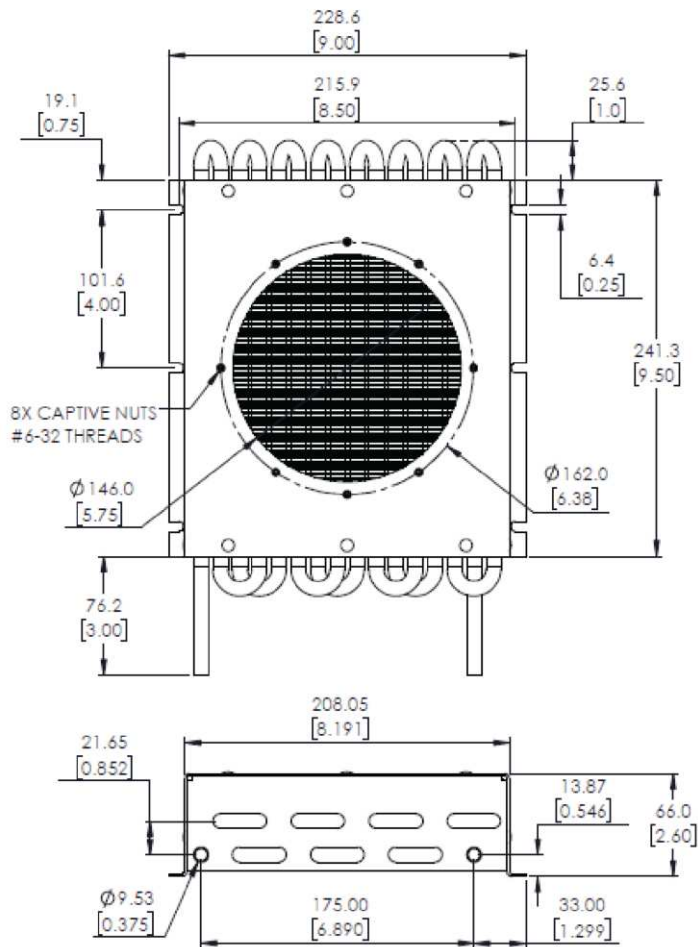
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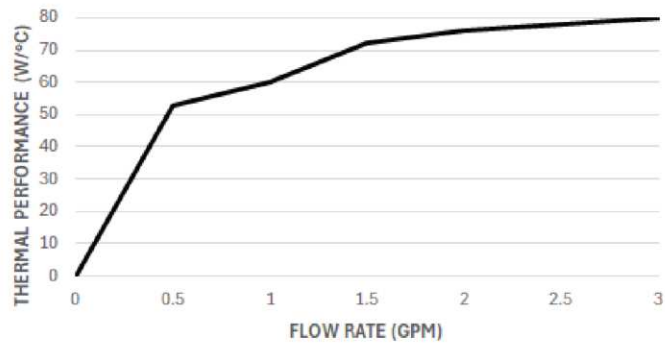


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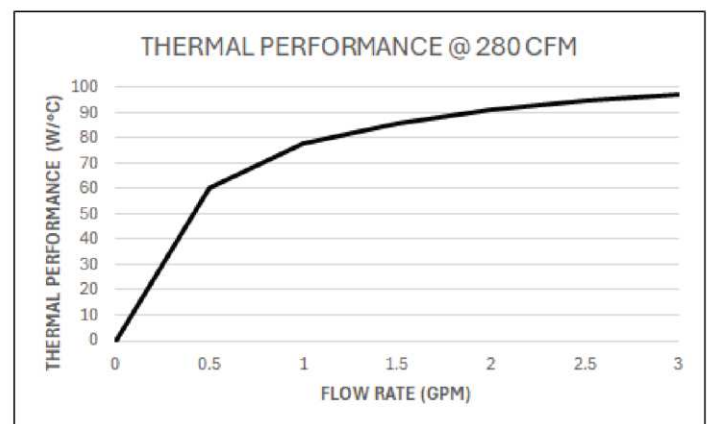
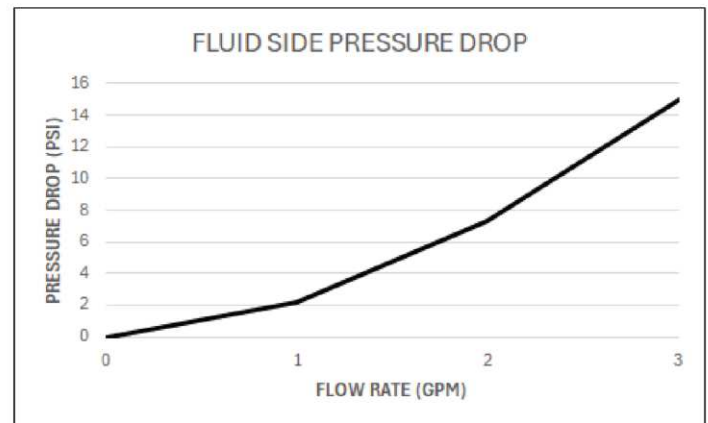
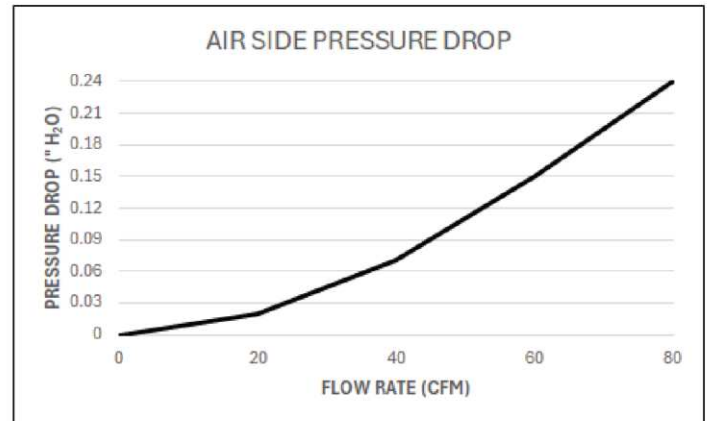
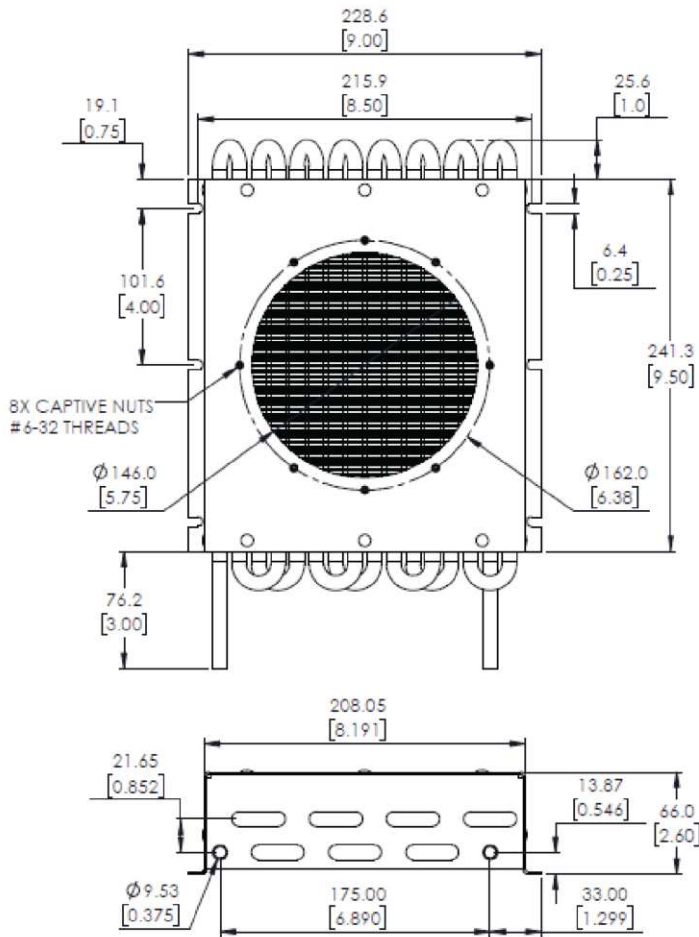


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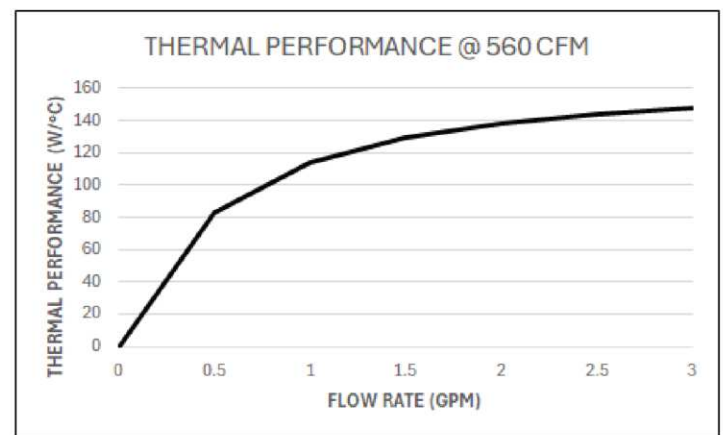
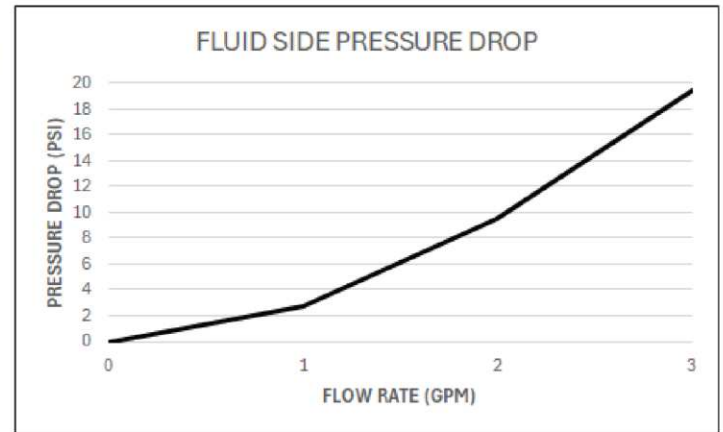
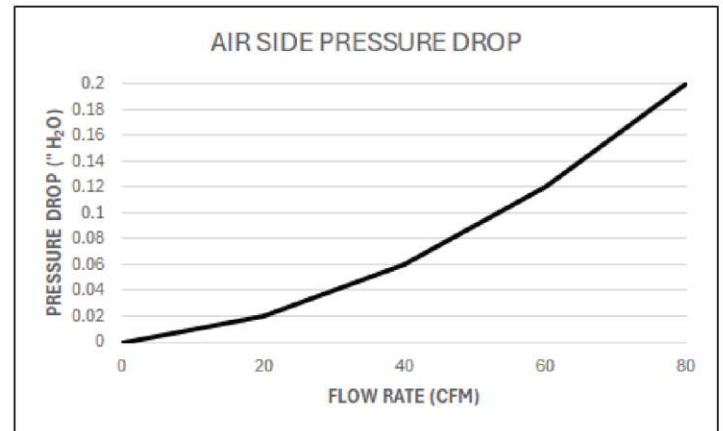
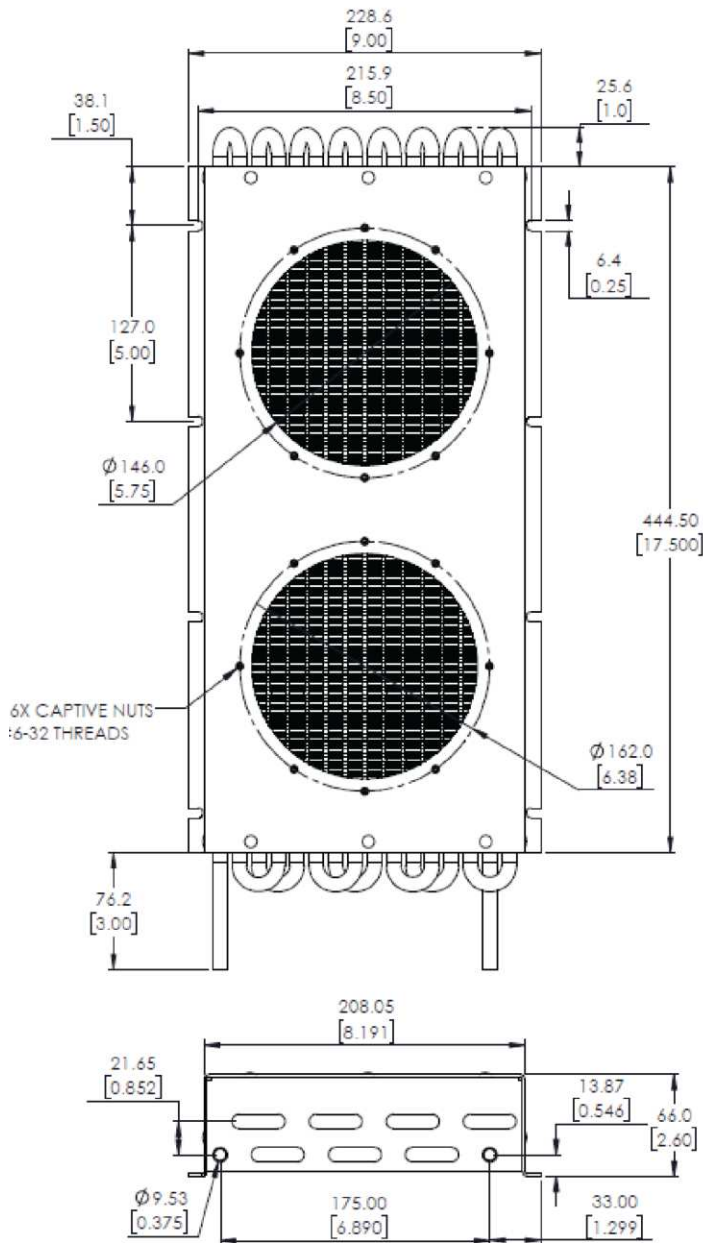




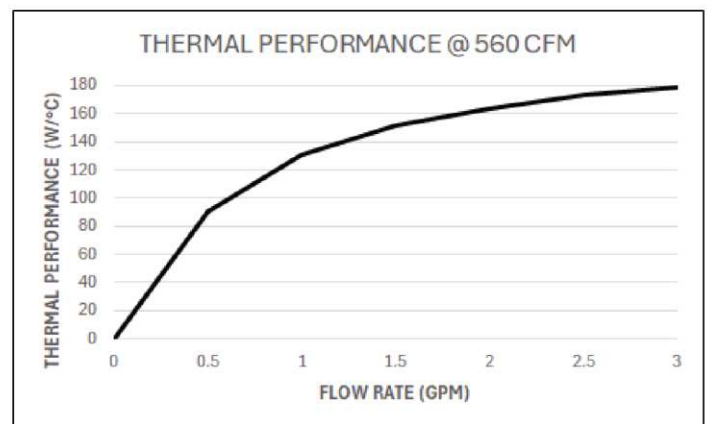
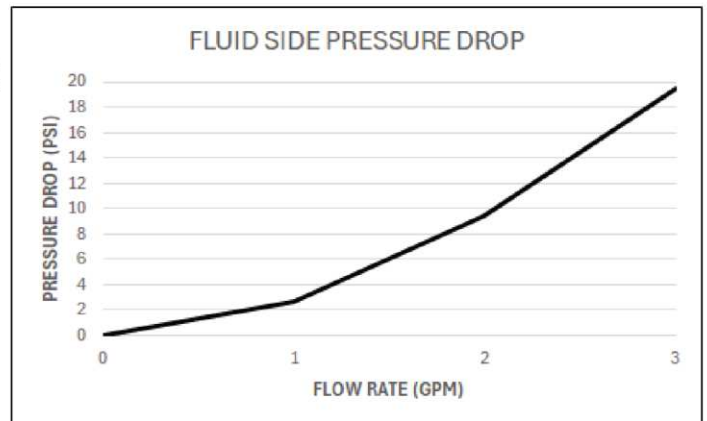
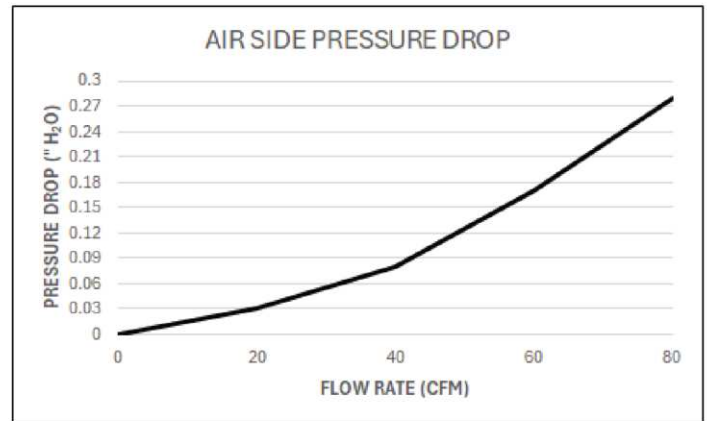
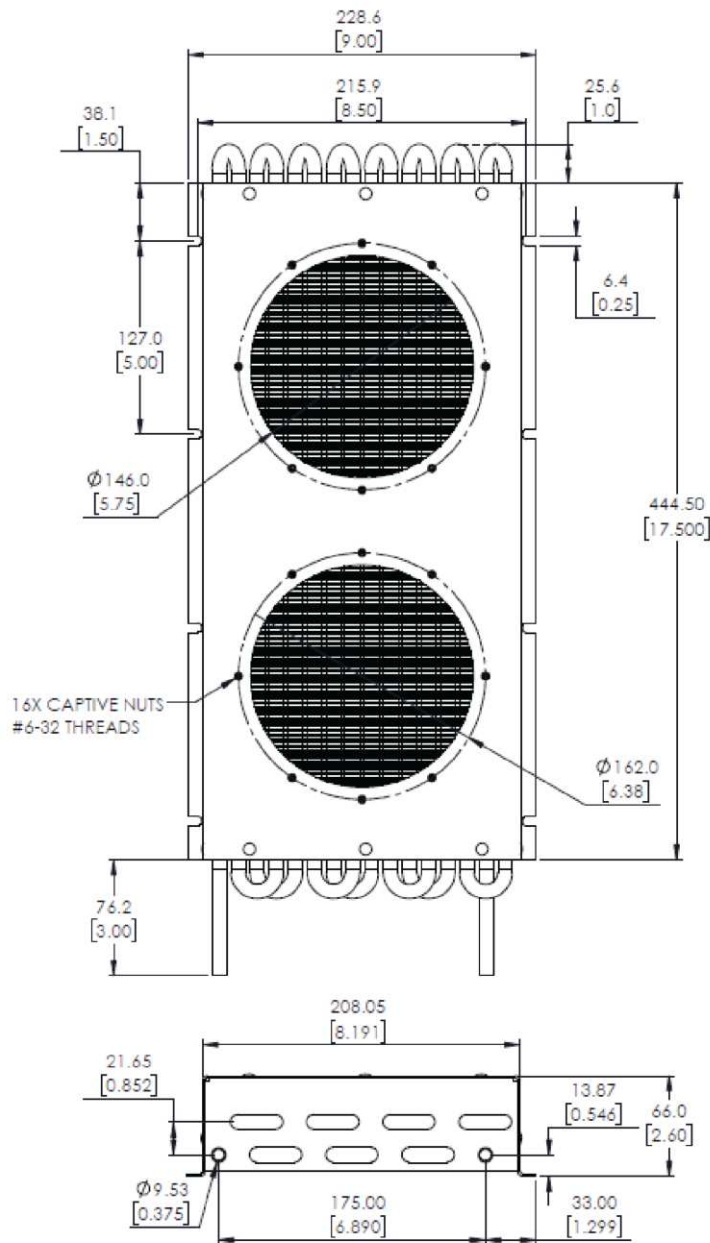
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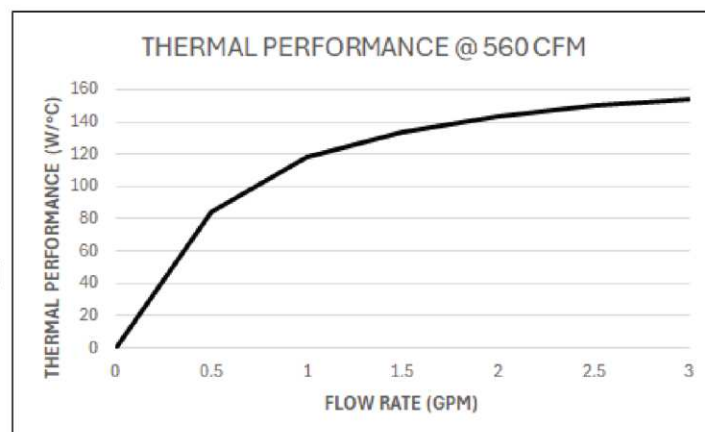
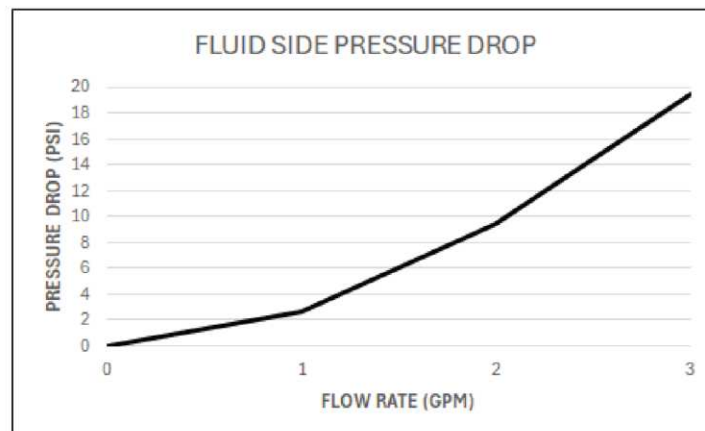
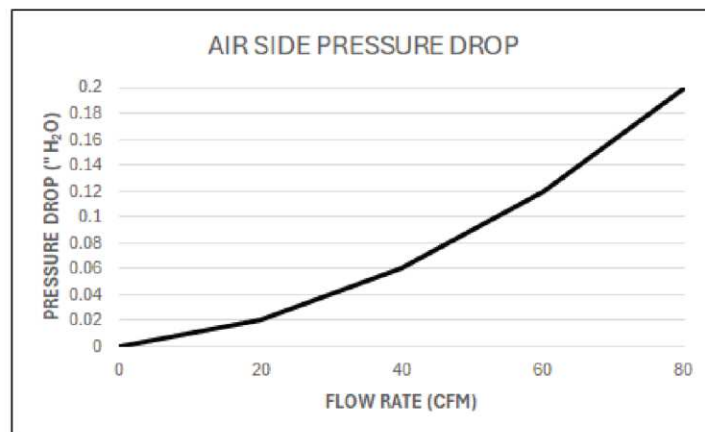
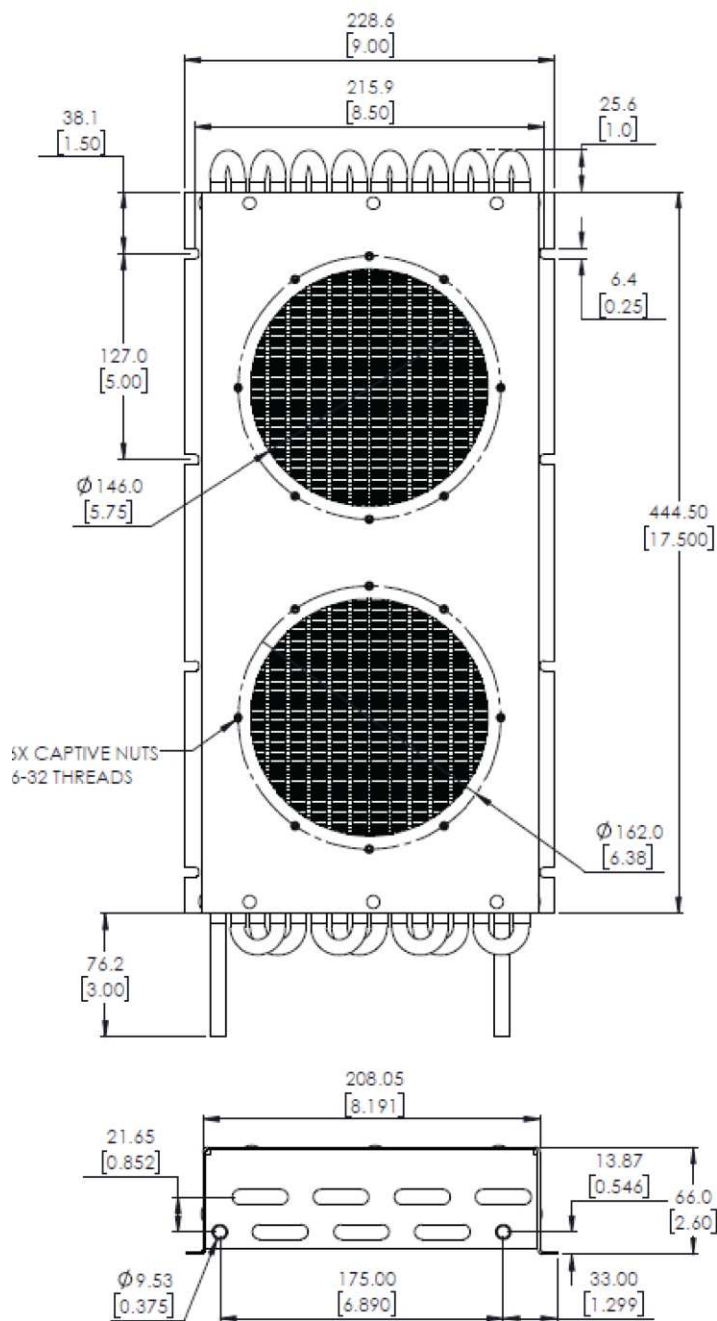
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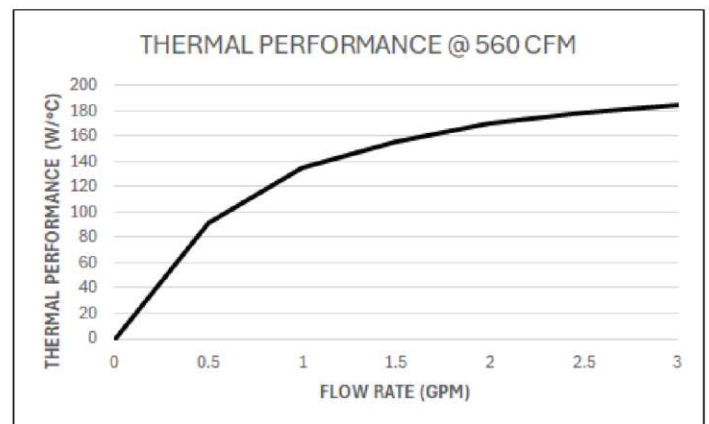
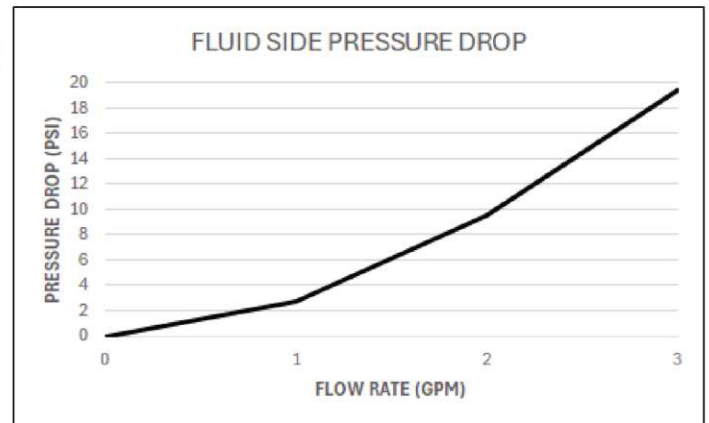
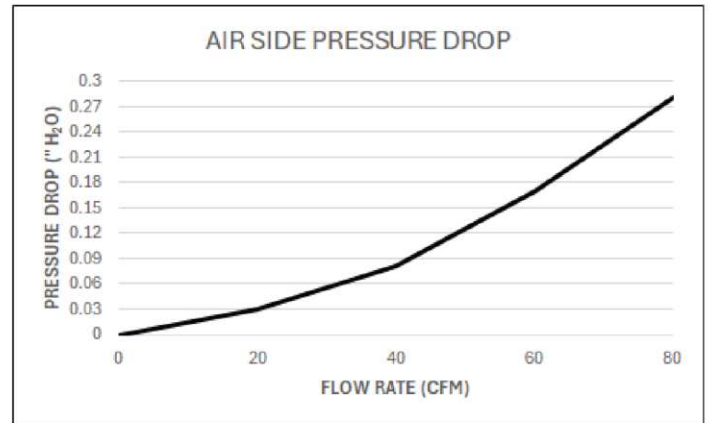
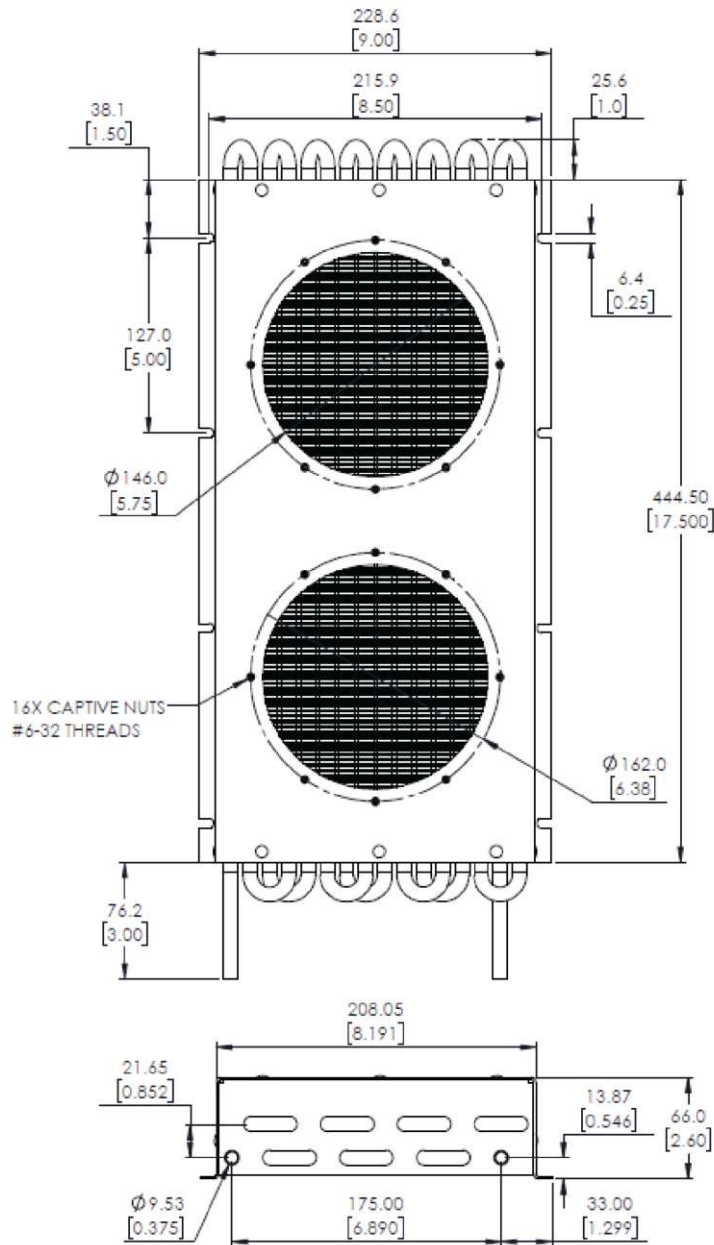
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124987



124988



HIGH PERFORMANCE RE-CIRCULATING LIQUID CHILLERS

Wakefield Thermal High Performance HPLC Series Compact Liquid Chiller, with circulating fluid temperature controller. CE marking and UL compliant with timer operations and alarming codes on 7 segment / 4 digit 2 row display. The HRS chiller has both air cooled and water cooled options available. Two power supplies are also available, 115VAC and 230 VAC single phase.



Features:

Easy Maintenance, Tool-less Filter Replacement
Operating Functions: Timer, Low Tank Level, Power Failure
Self-Diagnosis with 31 Types of Alarm Codes
Serial Communications and Input/Outputs as Standard
Shaped for Easy Supply of Circulating Fluid
Dustproof Filter
Unfixed Caster for Useful Transportation
Environmental Compliance: RoHS Directive, R407C Refrigerant
Power Failure Auto-Restart Function
Large Cooling Capacity

Applications:

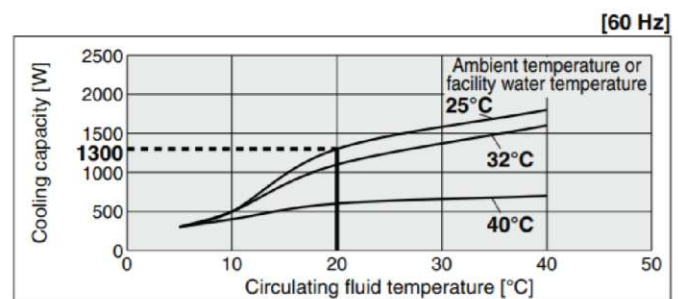
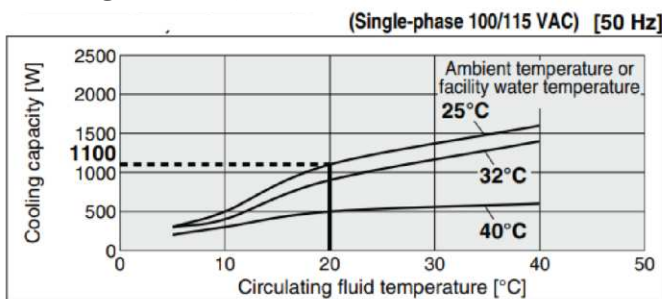
Laser Machining
UV Curing Devices
X-Ray Instruments
Electron Microscopes
Atomizing Devices
Temperature Control of Paint Material
Packaging Lines
Cooling of Vacuum Pumps

HPLC-10

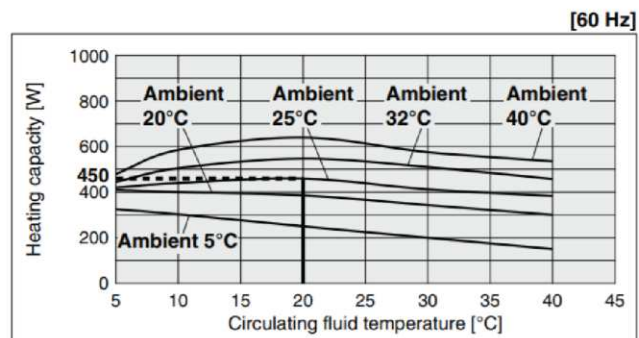
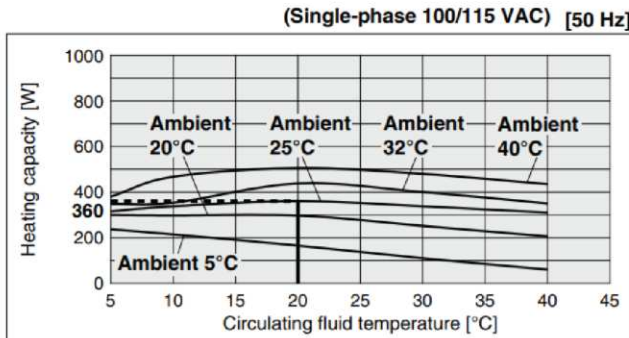
Cooling capacities:	1.3 kW-1.7 kW
Temperature range setting:	5 to 40°C
Temperature stability:	±0.1°C
Power supply requirement:	single phase 100 VAC, 50/60Hz or 115 VAC, 60Hz
Standards:	CE, UL, RoHS
Circulating fluid:	Tap water or 15% ethylene glycol solution



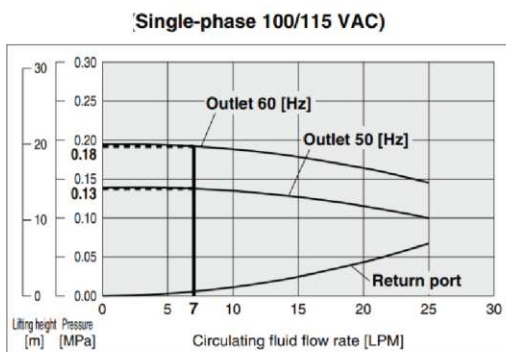
Cooling Capacity



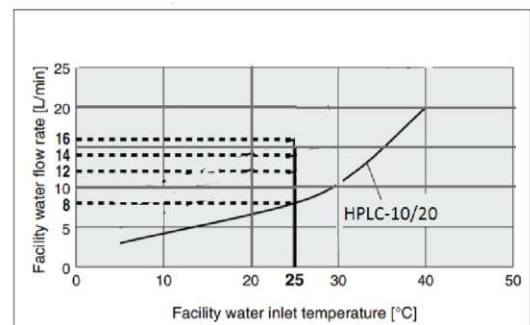
Heating Capacity



Pump Capacity



Required Facility Flow Rate



* This is the facility water flow rate at the circulating fluid rated flow rate and the cooling capacity listed in the "Cooling Capacity" specifications.

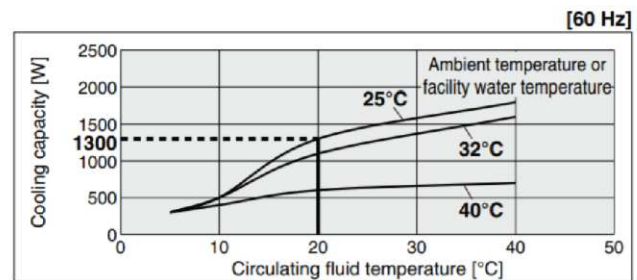
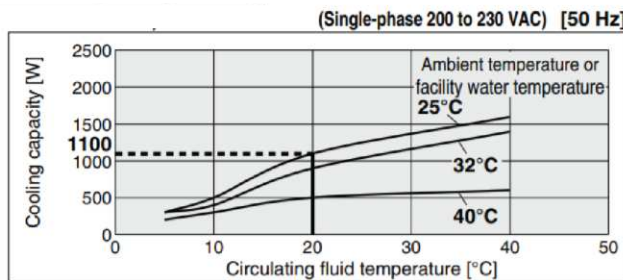
Cooling method:	Air-cooled refrigeration			
Refrigerant:	R407C (HFC)			
Control method:	PID control			
Ambient temperature/ humidity:	Temperature: 5 to 40°C, Humidity: 30 to 70%			
Circulating fluid system	Circulating fluid:	Clear water, 15% ethylene glycol aqueous solution		
	Temperature range setting (°C):	5 to 40		
	Cooling capacity (50/60 Hz) (W):	1100 / 1300		
	Heating capacity (50/60 Hz) (W):	360 / 450		
	Temperature stability (°C):	±0.1		
	Pump	Rated flow (50/60 Hz) (L/min):	7 (0.13 MPa) / 7 (0.18 MPa)	
		Maximum flow rate (50/60 Hz) (L/min):	27 / 29	
		Maximum high-lift (50/60 Hz) (m):	14 / 19	
		Output (W):	200	
	Tank capacity (L):	Approx. 5		
	Port size:	Rc1/2		
	Wetted parts material:	Stainless steel, Copper (Heat exchanger brazing), Bronze, Alumina ceramic, Carbon, PP, PE, POM, FKM, EPDM, PVC		
Facility water system	Port size:	Rc3/8		
	Wetted parts material:	Stainless steel, Copper (Heat exchanger brazing), Bronze, Synthetic rubber		
Electrical system	Power supply:	Single-phase 100 VAC (50/60 Hz), 115 VAC (60 Hz) Allowable voltage range ±10%		
	Circuit protector (A):	15		
	Applicable earth leakage breaker capacity (A):	15		
	Rated operating current (A):	7.5 / 8.3		
	Rated power consumption (50/60 Hz) (kVA):	0.7 / 0.8		
Noise level (50/60 Hz) (dB):	58 / 55			
Accessories	Fitting (for drain outlet) 1 pc., Input/output signal connector 1 pc., Power supply connector 1 pc., Operation manual (for installation/operation) 1, Quick manual (with a clear case) 1, Alarm code list sticker 1, Ferrite core (for communication) 1 pc. Power supply cable should be ordered as an option (sold separately) or prepared by the customer.			
Weight (kg):	40			

HPLC-20

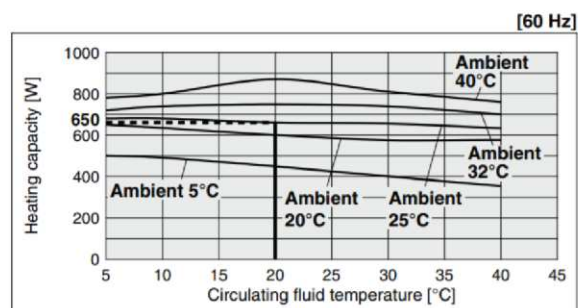
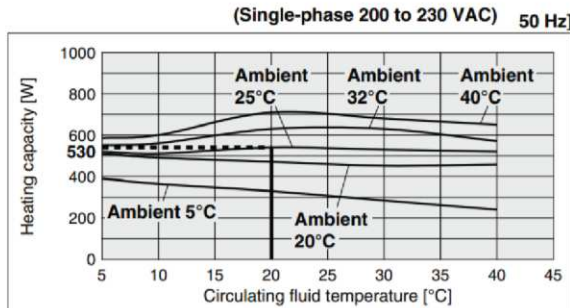
Cooling capacities:	1.4 kW-1.9 kW
Temperature range setting:	5 to 40°C
Temperature stability:	±0.1°C
Power supply requirement:	single phase 200 to 230 VAC, 50/60Hz
Standards:	CE, UL, RoHS
Circulating fluid:	Tap water or 15% ethylene glycol solution



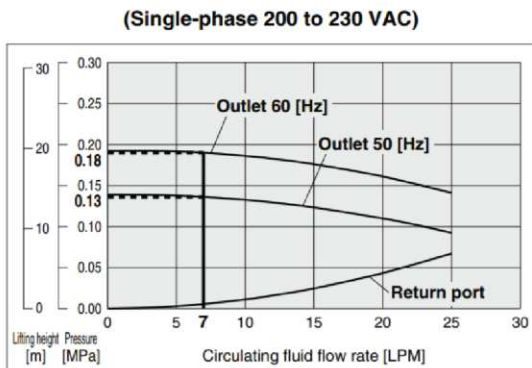
Cooling Capacity



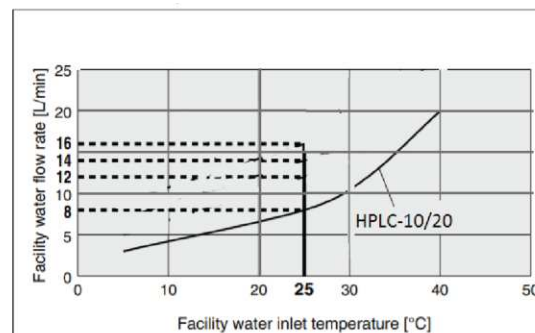
Heating Capacity



Pump Capacity



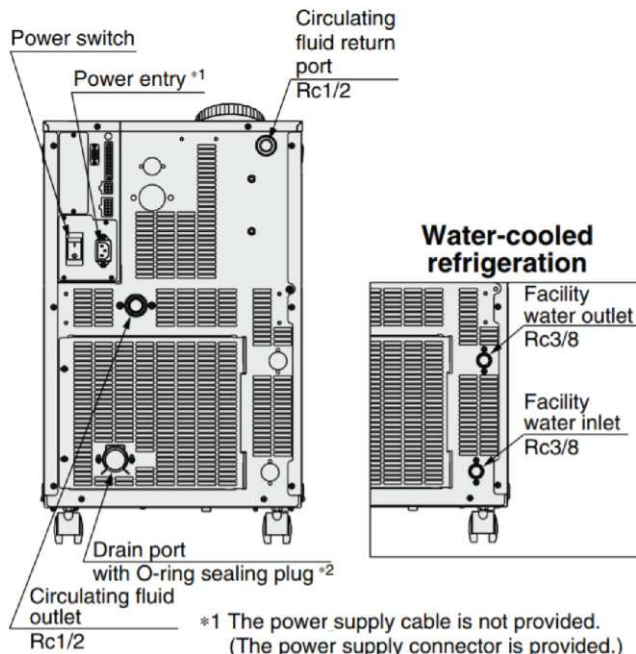
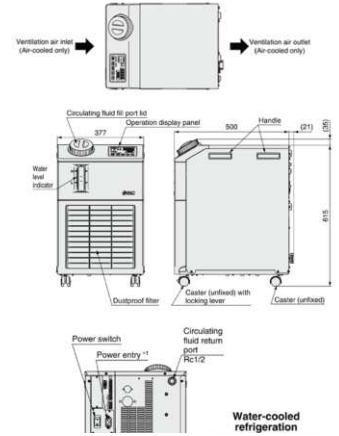
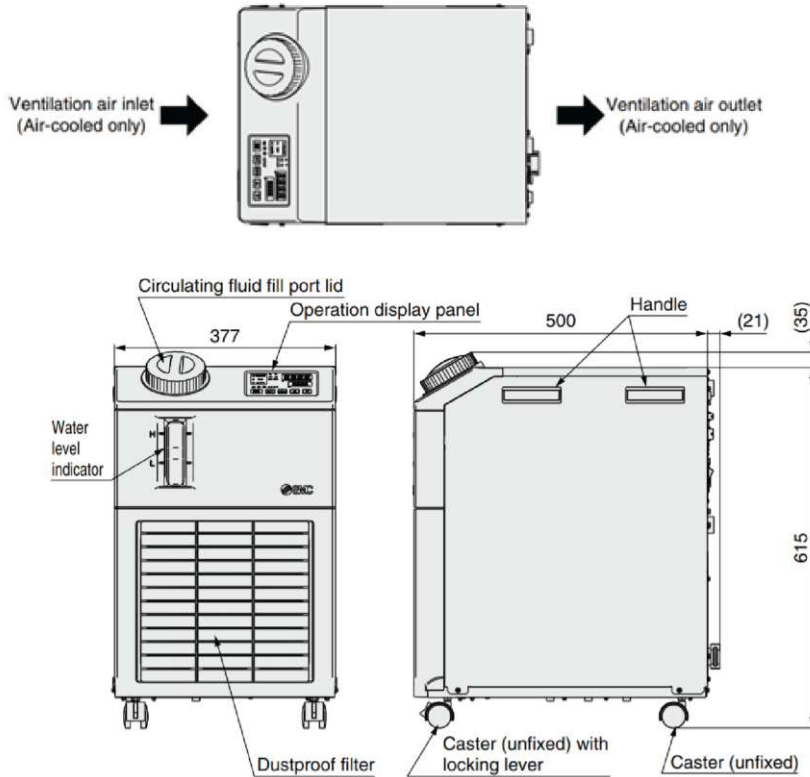
Required Facility Flow Rate



* This is the facility water flow rate at the circulating fluid rated flow rate and the cooling capacity listed in the "Cooling Capacity" specifications.

Cooling method:	Air-cooled refrigeration			
Refrigerant:	R407C (HFC)			
Control method:	PID control			
Ambient temperature/ humidity:	Temperature: 5 to 40°C,High-temperature environment specifications(option): 5 to 45°C, Humidity: 30 to 70%			
Circulating fluid system	Circulating fluid:	Clear water, 15% ethylene glycol aqueous solution		
	Temperature range setting (°C):	5 to 40		
	Cooling capacity (50/60 Hz) (W):	1100 / 1300		
	Heating capacity (50/60 Hz) (W):	530 / 650		
	Temperature stability (°C):	±0.1		
	Pump	Rated flow (50/60 Hz) (L/min):	7 (0.13 MPa) / 7 (0.18 MPa)	
		Maximum flow rate (50/60 Hz) (L/min):	27 / 29	
		Maximum high-lift (50/60 Hz) (m):	14 / 19	
		Output (W):	200	
	Tank capacity (L):	Approx. 5		
	Port size:	Rc1/2		
	Wetted parts material:	Stainless steel, Copper (Heat exchanger brazing), Bronze, Alumina ceramic, Carbon, PP, PE, POM, FKM, EPDM, PVC		
Facility water system	Port size:	Rc3/8		
	Wetted parts material:	Stainless steel, Copper (Heat exchanger brazing), Bronze, Synthetic rubber		
Electrical system	Power supply:	Single-phase 200 to 230 VAC (50/60 Hz), Allowable voltage range ±10%		
	Circuit protector (A):	10		
	Applicable earth leakage breaker capacity (A):	10		
	Rated operating current (A):	4.6 / 5.1		
	Rated power consumption (50/60 Hz) (kVA):	0.9 / 1.0		
Noise level (50/60 Hz) (dB):	60 / 61			
Accessories	Fitting (for drain outlet) 1 pc., Input/output signal connector 1 pc., Power supply connector 1 pc., Operation manual (for installation/operation) 1, Quick manual (with a clear case) 1, Alarm code list sticker 1, Ferrite core (for communication) 1 pc. Power supply cable should be ordered as an option (sold separately) or prepared by the customer.			
Weight (kg):	43			

DIMENSIONS HPLC 10/20

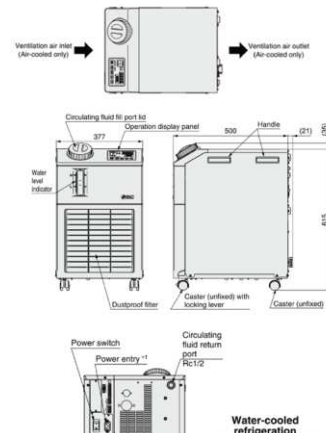
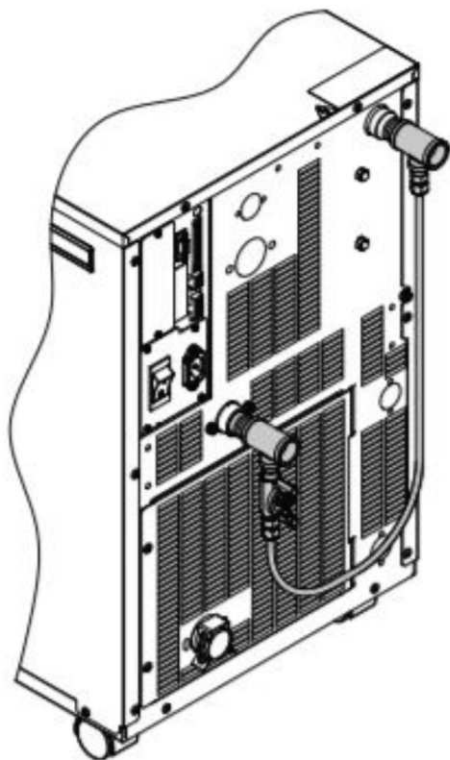


*1 The power supply cable is not provided.
(The power supply connector is provided.)

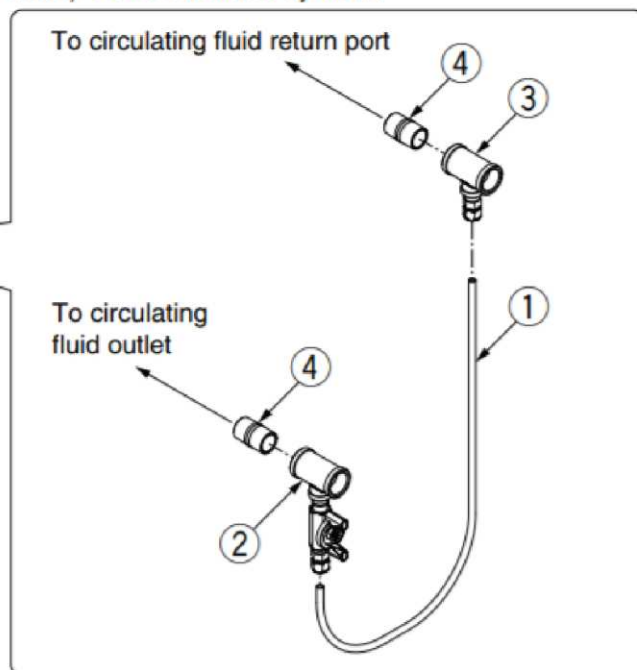
*2 The conversion fitting (R3/8 male thread)
is provided.

HPLC-BP1

Bypass kit for use with HPLC-10 & HPLC-20 to maintain minimum flow rate of 7 l/min to keep the system running properly.



Note) To be mounted by user.



Parts List

No.	Description
①	Bypass tube (700 mm) (Part no.: TL0806)
②	Outlet piping (with ball valve)
③	Return port piping
④	Nipple (Size: 1/2) (2 pcs.)

COMPACT LIQUID CHILLERS

LIQUID COOLED

Wakefield Thermal offers a range of liquid chiller modules (LCMs) that integrate the essential components of a cooling system — including the compressor, condenser, expansion valve, and evaporator — and can be tailored by our engineering team to address specific thermal and spatial requirements of clients.

The compact LCM is employed across diverse sectors, including medical devices, life sciences, laboratory instrumentation, electronics cooling, laser cooling, and personal cooling applications.

Part #	Description	Max Current	Max Power Draw	VDC	Operating Temp (°C)	Coolant Temp (°C)	Storage Temp (°C)	Refrigerant
FP00097	137H X 192W X 224D mm, Compact Liquid Chiller Module	15 A	360 W (24 VDC)	22-27	-20° - 40°	-15° - 50°	-20° - 50°	R134a



Part #	Description	Max Current	Max Power Draw	VDC	Operating Temp (°C)	Coolant Temp (°C)	Storage Temp (°C)	Refrigerant
FP00039	134H X 199W X 161D mm, Compact Liquid Chiller Module	15 A	360 W (24 VDC)	22-30	0° - 50°	0° - 50°	-20° - 50°	R134a



NOTES

[illegible]

NOTES

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



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