ATS ADVANCED THERMAL SOLUTIONS, INC.
Innovation in Thermal Management®

DIY COLD PLATES

DO-IT-YOURSELF

*Image for illustration purposes only

DIY Cold Plates give engineers a tool for cold plate design to fully customize the fit of the cold plate with their target heat source. Whether that heat source is an IGBT, MOSFET, Wide Band Gap devices or other high heat device. ATS can manufacture in small or large volume once the applications mounting pattern is determined.

On the outside of the “no drill zone,” through holes can be drilled at any point. (Avoid drilling into the I/O ports.) Inside the “no drill zone” holes can only be drilled to a depth of 6 mm or 7mm to avoid damaging the internal fin field. (See drawings on individual product pages for depths.)

FEATURES AND BENEFITS

- More than 30% improvement in thermal performance compared to commercially available cold plates
- Compatible with industry accepted coolants
- 1/4”-18 NPT threaded inlet and outlet ports
- Low pressure drop
- Provides uniform cold plate surface temperature
- Provides same performance as standard ATS cold plates, but without pre-drilled holes
- Maximum pressure: 60 psi
- Lightweight for ease of use

ATS DIY Cold Plate Family	
Part Number	**Dimensions (mm) (L x W x H)**
ATS-CP-1000-DIY	202 x 130 x 20
ATS-CP-1001-DIY	198 x 147 x 20
ATS-CP-1002-DIY	162 x 136 x20
ATS-CP-1003-DIY	162 x 147 x 20
ATS-CP-1004-DIY	162 x 172 x 20
ATS-CP-1007-DIY	235 x 85 x 22
ATS-CP-1008-DIY	220 x 70 x 25
ATS-CP-1009-DIY	87 x 115 x 20

ADDITIONAL COMPONENTS DEPLOYED IN LIQUID COOLING LOOPS


Cold Plates


Heat Exchangers


Leak Detectors & Flow Meters

Chillers


iCDM

ATS has the products needed to design a complete liquid cooling loop: **Cold Plates** to transfer and remove the heat from the source, **Heat Exchangers** to transfer heat from the liquid to the air with or without a fan, and **Chillers** to circulate and condition the fluid in the system. In addition, ATS offers **Flow Meters** and **Leak Detectors** to monitor the system. The **iCDM** (Industrial Cooling Distribution Module) is a liquid loop in a single stand-alone system that connects to an external cold plate.

ATS DIY COLD PLATES

» Innovative Technology
Superior heat transfer, flexible design platform

» Compact Design
Designed to fit standard IGBT and other power electronics applications

» Easy Connections
Industry standard threaded ports allow for hassel-free connection options

» Safe & Reliable
Leak Free (100% tested)

» Custom Options
Choose from various options, i.e; fitting types, material types, device mounting and more. Contact ATS for additional information

» Customization Available!
ATS will customize any of the cold plates to fit into your application

APPLICATIONS

Automotive, Instruments, Uninterruptible Power Supplies, Wind Turbines, Photovoltaic Inverters, Power Electronics, Induction Heaters, Motor Devices, High-Powered Industrial Lasers Battery Cooling, High-Power and High-Heat Flux Applications

RoHS COMPLIANT

ATS-CP-1000-DIY

Dimensions (L x W x H)

202 x 130 x 20 mm

(8.0 x 5.1 x 0.8")

Weight

1,200 g

Material

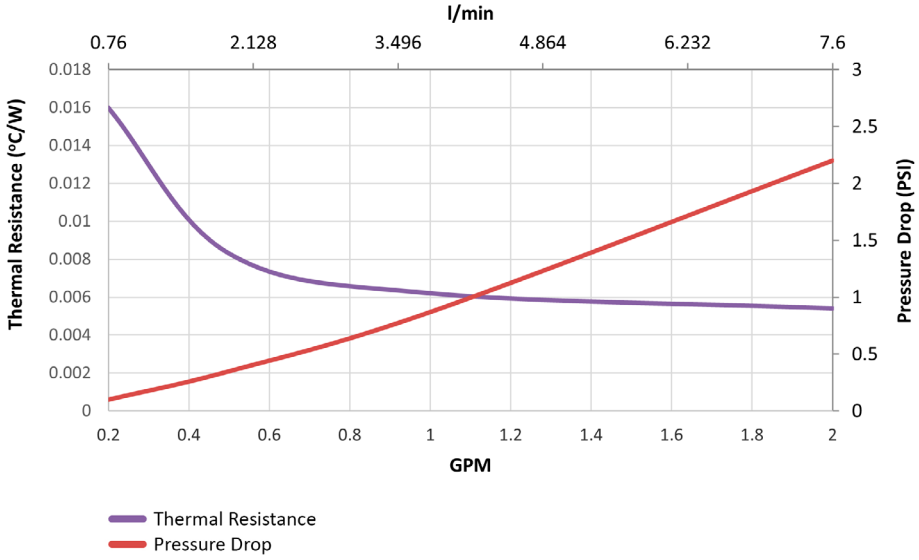
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1000-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0054	2.20
1.0	0.0062	0.87
0.5	0.0083	0.35
0.2	0.0160	0.10

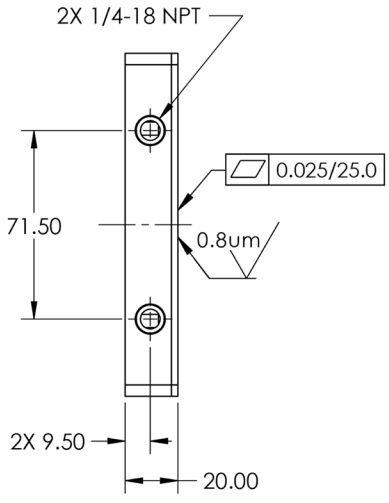
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

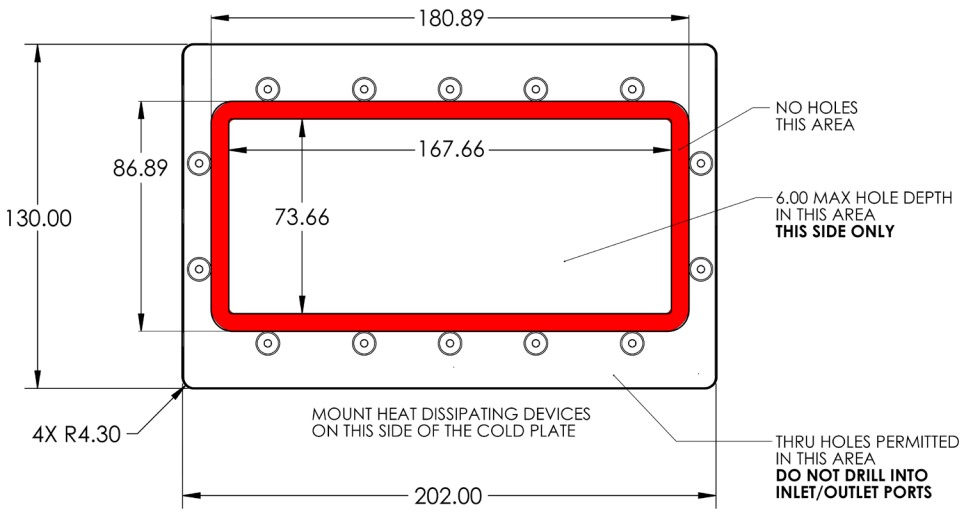
Thermal Resistance and Pressure Drop for ATS-CP-1000-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)





ATS-CP-1001-DIY

Dimensions (L x W x H)

198 x 147 x 20 mm

(7.8 x 5.8 x 0.8")

Weight

1,340 g

Material

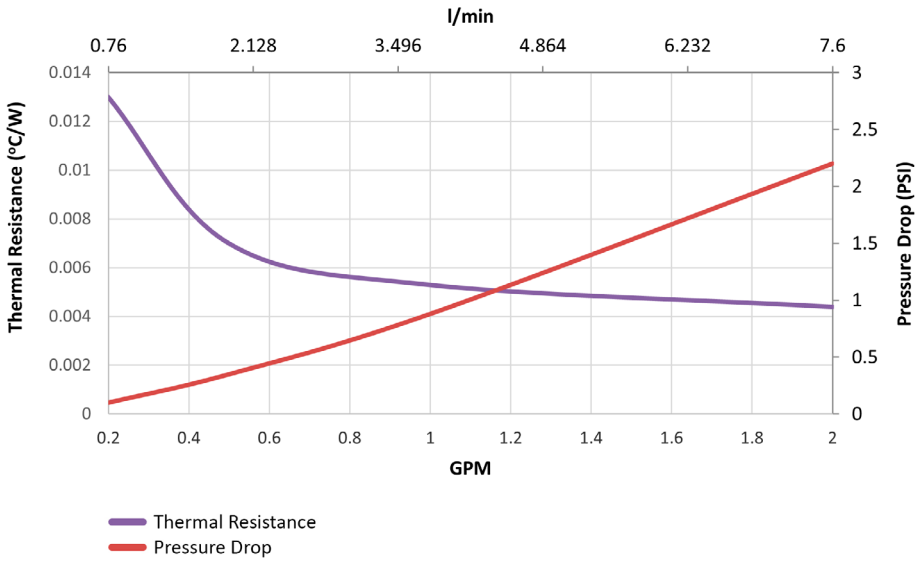
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1001-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0044	2.20
1.0	0.0053	0.88
0.5	0.0070	0.35
0.2	0.0130	0.10

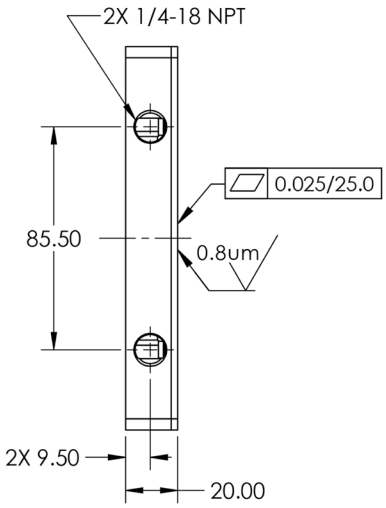
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

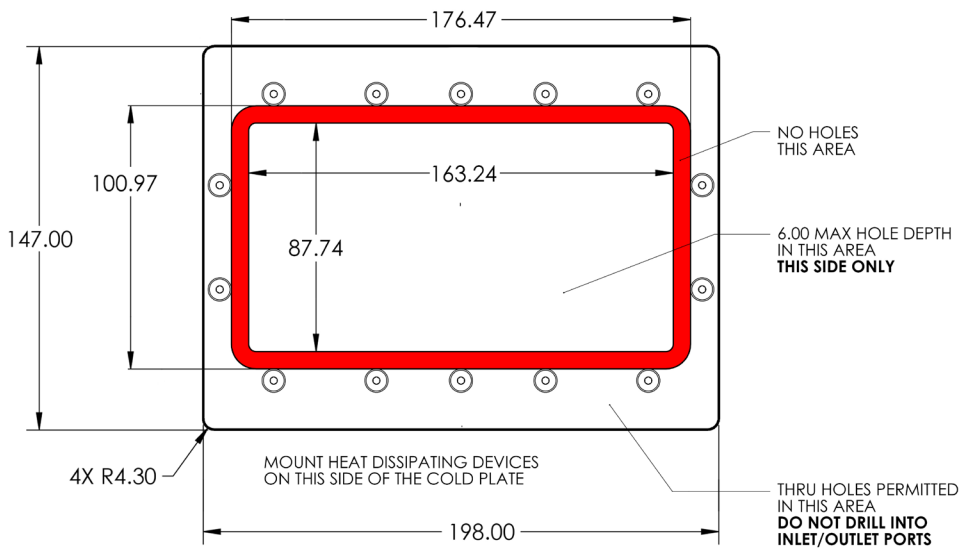
Thermal Resistance and Pressure Drop for ATS-CP-1001-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)





ATS-CP-1002-DIY

Dimensions (L x W x H)

162 x 136 x 20 mm

(6.4 x 5.4 x 0.8")

Weight

1,102 g

Material

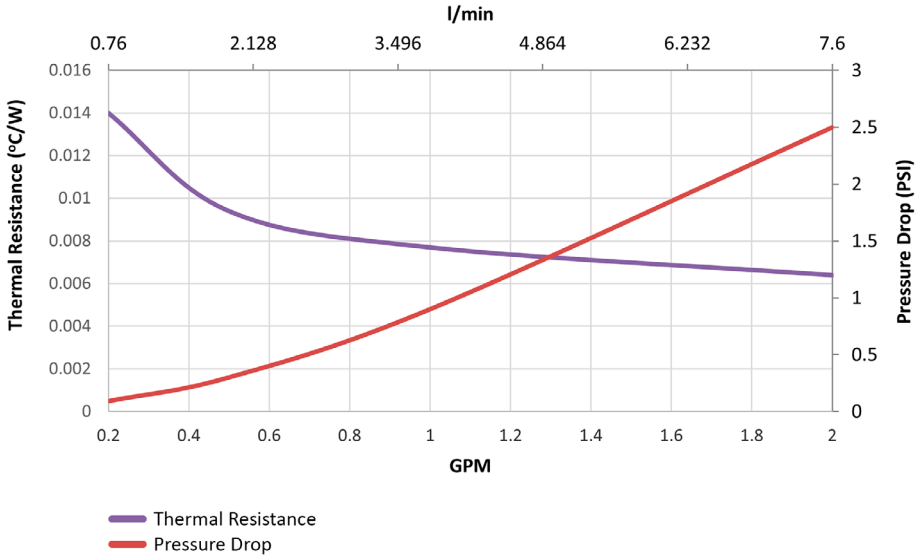
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1002-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0064	2.50
1.0	0.0077	0.90
0.5	0.0094	0.30
0.2	0.0140	0.09

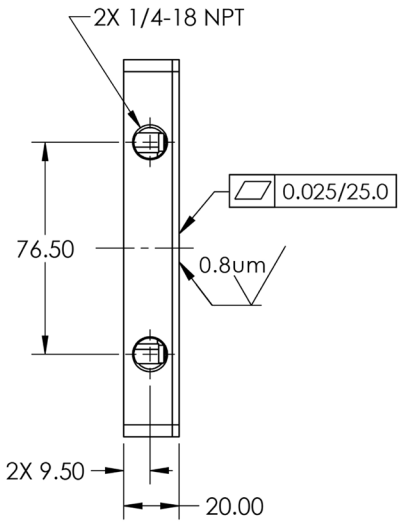
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

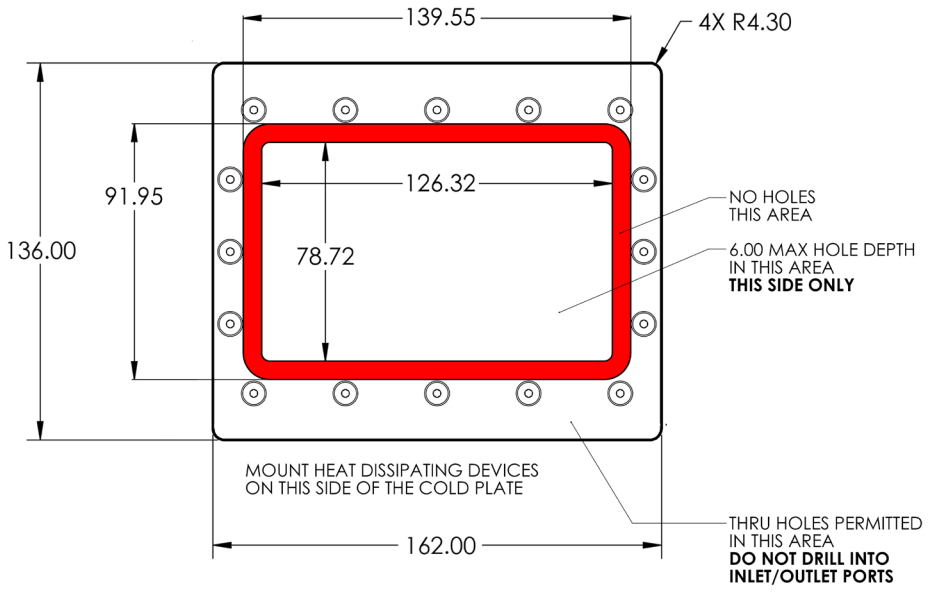
Thermal Resistance and Pressure Drop for ATS-CP-1002-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)





ATS-CP-1003-DIY

Dimensions (L x W x H)

162 x 147 x 20 mm

(6.4 x 5.8 x 0.8")

Weight

1,102 g

Material

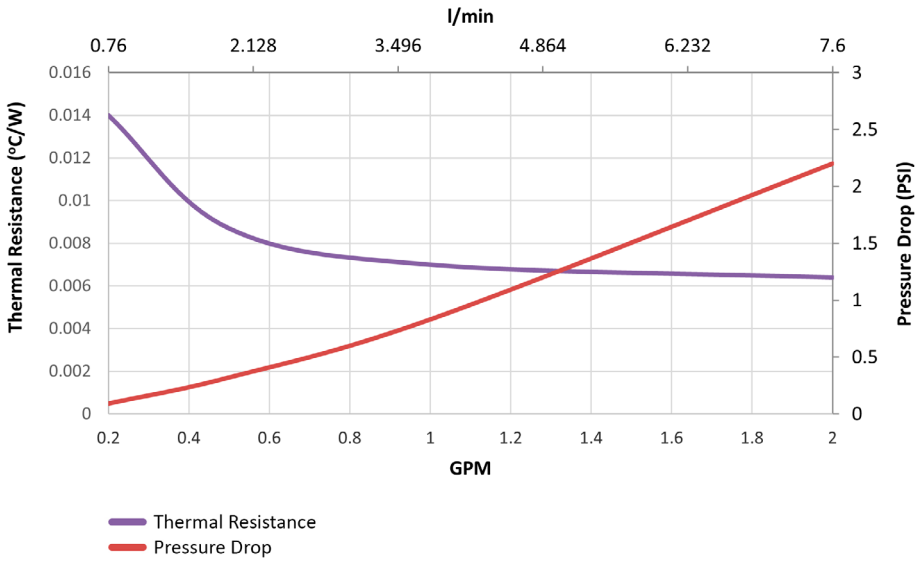
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1003-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0064	2.20
1.0	0.0070	0.83
0.5	0.0087	0.32
0.2	0.0140	0.09

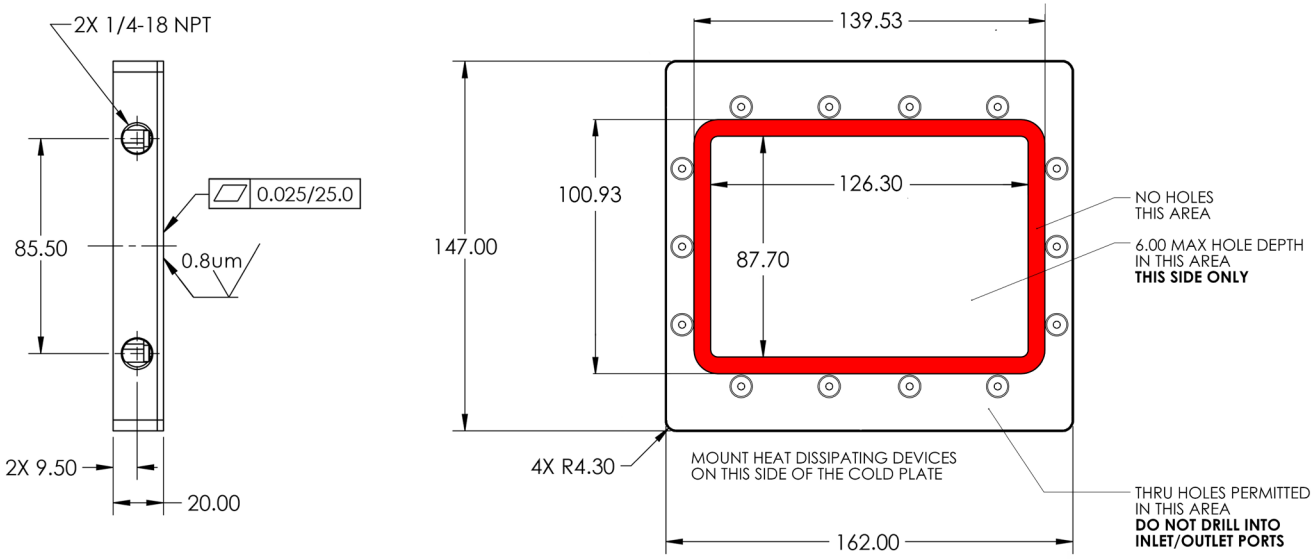
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

Thermal Resistance and Pressure Drop for ATS-CP-1003-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)



ATS-CP-1004-DIY

Dimensions (L x W x H)

162 x 172 x 20 mm

(6.4 x 6.8 x 0.8")

Weight

1,280 g

Material

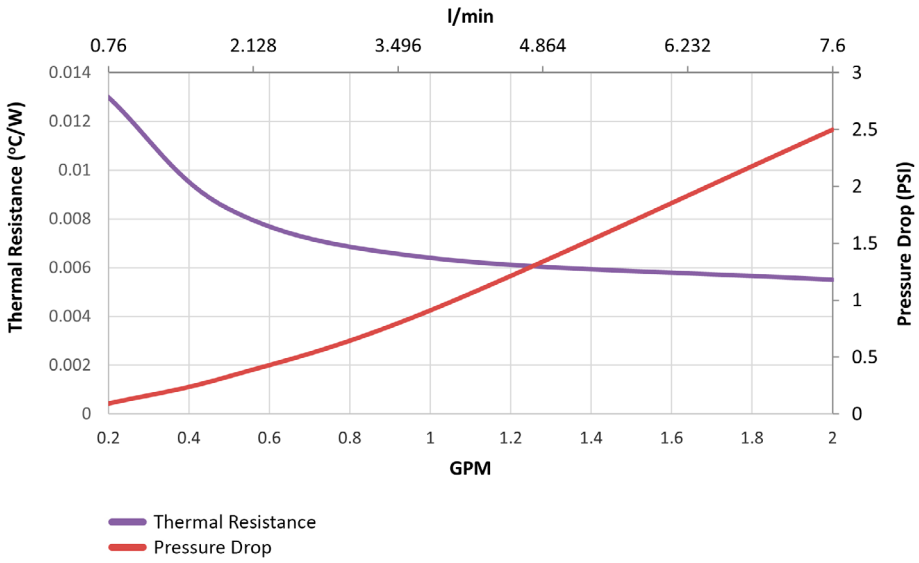
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1004-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0055	2.50
1.0	0.0064	0.91
0.5	0.0084	0.33
0.2	0.0130	0.09

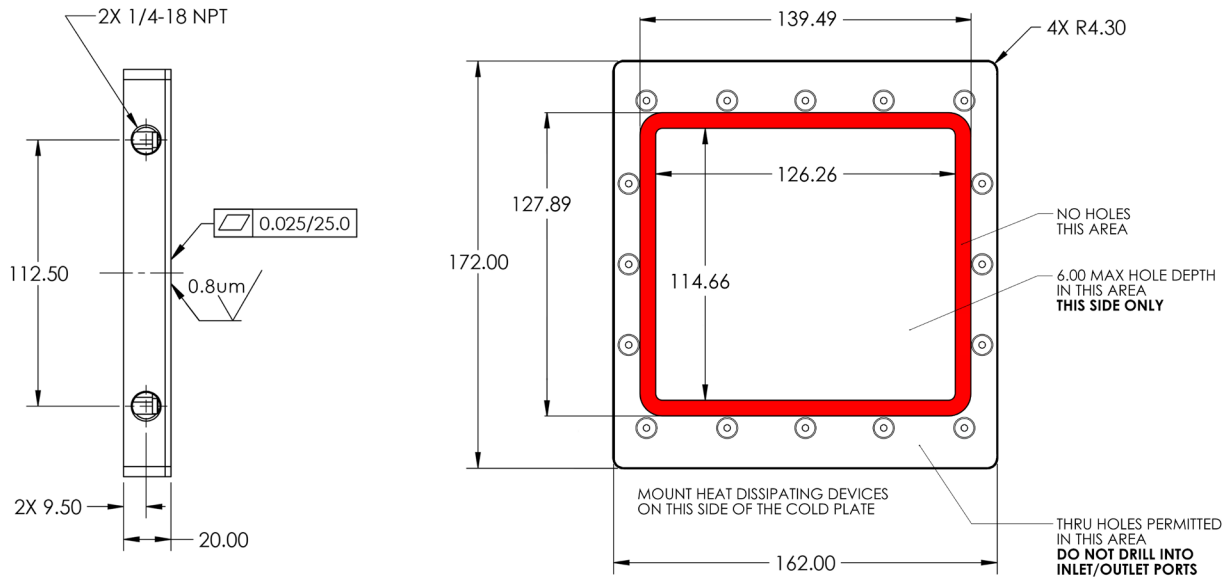
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

Thermal Resistance and Pressure Drop for ATS-CP-1004-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)



ATS-CP-1007-DIY

Dimensions (L x W x H)

235 x 85 x 22 mm

(9.3 x 3.3 x 0.9”)

Weight

991 g

Material

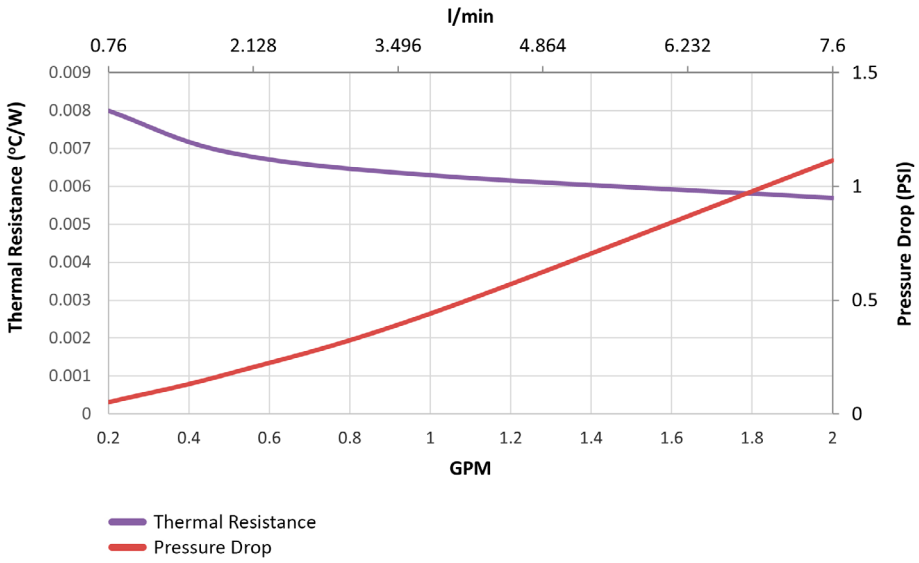
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1007-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0057	1.12
1.0	0.0063	0.44
0.5	0.0069	0.18
0.2	0.0080	0.05

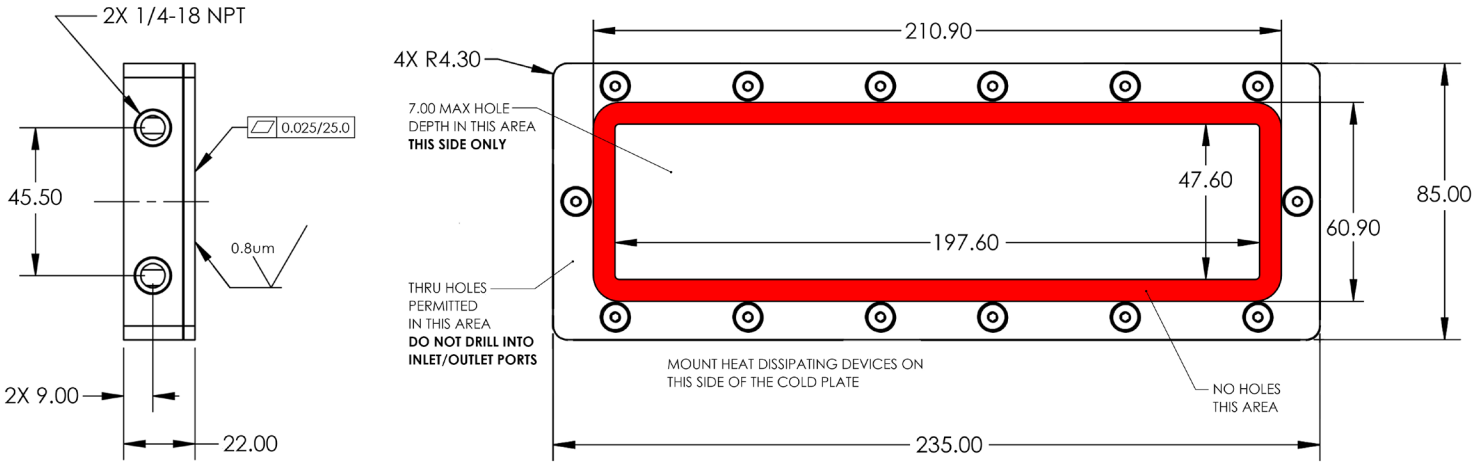
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

Thermal Resistance and Pressure Drop for ATS-CP-1007-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)



ATS-CP-1008-DIY

Dimensions (L x W x H)

220 x 70 x 25 mm

(8.7 x 2.8 x 1.0")

Weight

881 g

Material

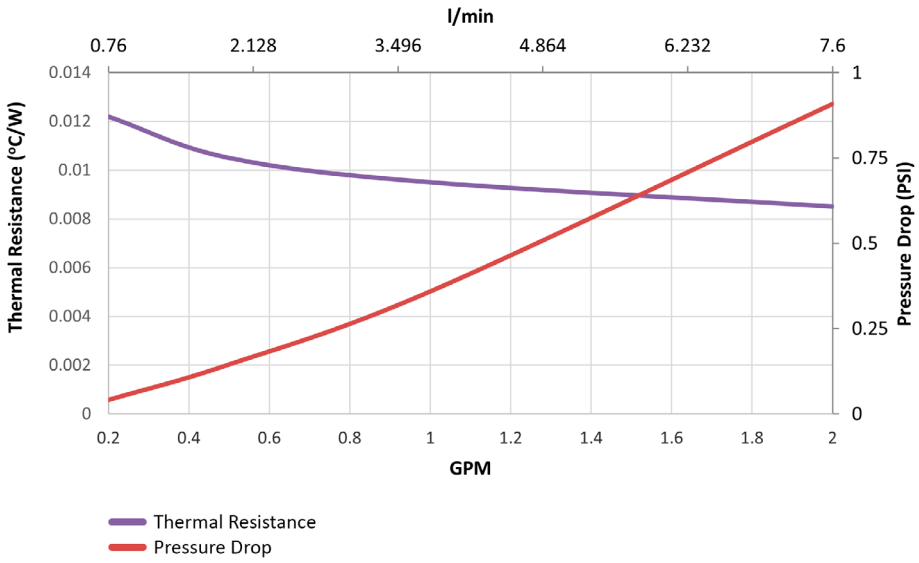
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1008-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0085	0.91
1.0	0.0095	0.36
0.5	0.0105	0.15
0.2	0.0122	0.04

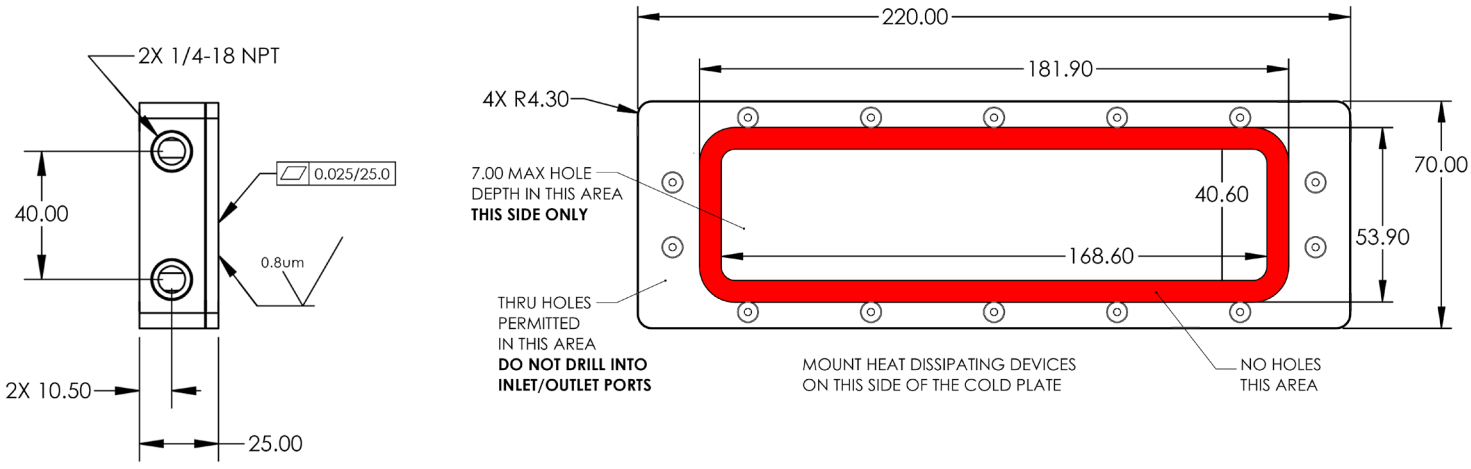
* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

Thermal Resistance and Pressure Drop for ATS-CP-1008-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)



ATS-CP-1009-DIY

Dimensions (L x W x H)

87 x 115 x 20 mm

(3.4 x 4.5 x 0.8")

Weight

441 g

Material

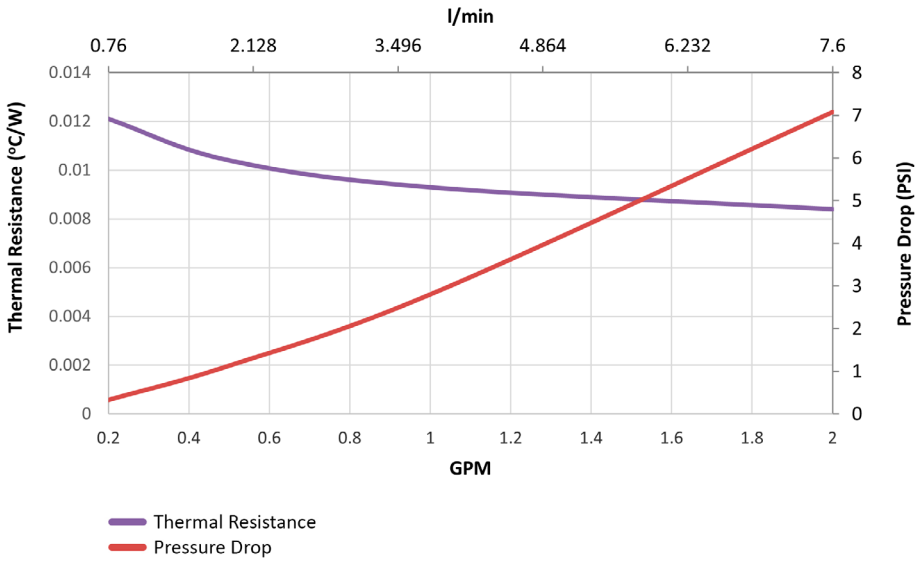
Aluminum 6061 & 6063 - Unfinished

PERFORMANCE

ATS-CP-1009-DIY Performance (Fluid - 30% glycol / 70% water)		
Flow Rate (gallon/min)*	**Thermal Resistance (°C/W)**	**ΔP (psi)****
2.0	0.0084	7.08
1.0	0.0093	2.80
0.5	0.0104	1.13
0.2	0.0121	0.32

* Note: To convert to l/min, multiply by 3.8
** Note: To convert to kPa, multiply by 6.9

Thermal Resistance and Pressure Drop for ATS-CP-1009-DIY
(Fluid - 30% glycol / 70% water)



MECHANICAL SPECIFICATIONS

(all dimensions in mm)