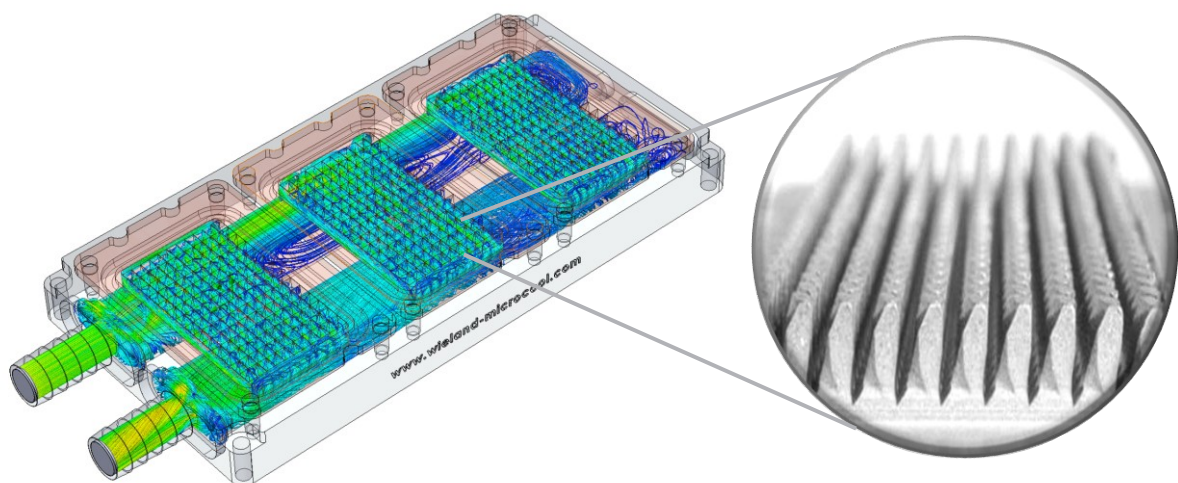


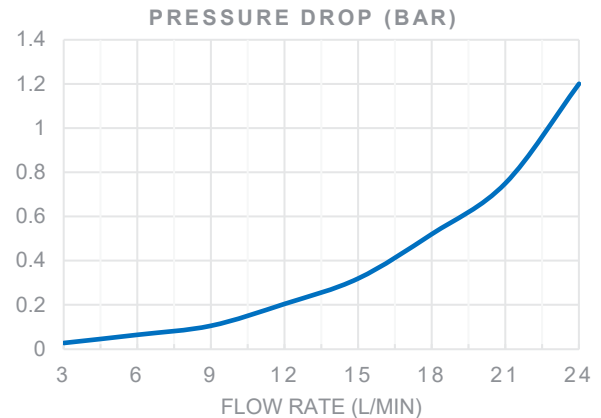
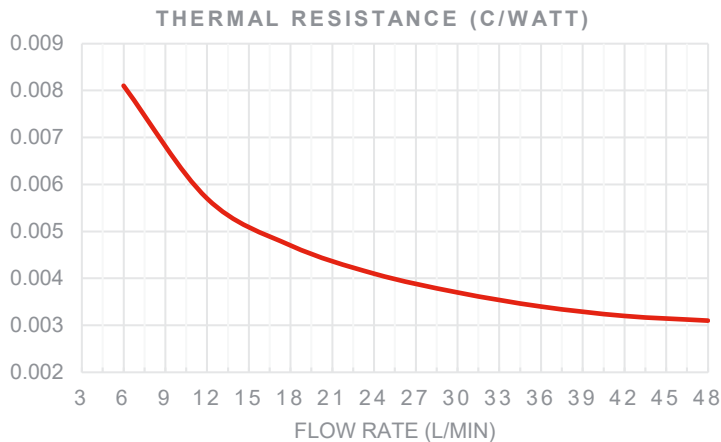
CP4012D

wieland microcool

4000 series coldplate for the *Wolfspeed* XM3 module

The CP4012D aluminum **friction stir welded** coldplate has been optimized specifically for the high heat flux of silicon carbide. The **MDT (micro deformation technology)** inside allows for the very low thermal resistance, low pressure drop and balanced parallel flow.





* Thermal resistance is calculated as the difference between maximum coldplate temp and the inlet fluid temp divided by the total coldplate power.

** Pressure drop is calculated from inlet to outlet without fittings, Coolant used for testing: 50/50 water and ethylene glycol.

***Preliminary results based off www.microcooltool.com, see below for empirical results

See empirical testing results below from Wolf speed:

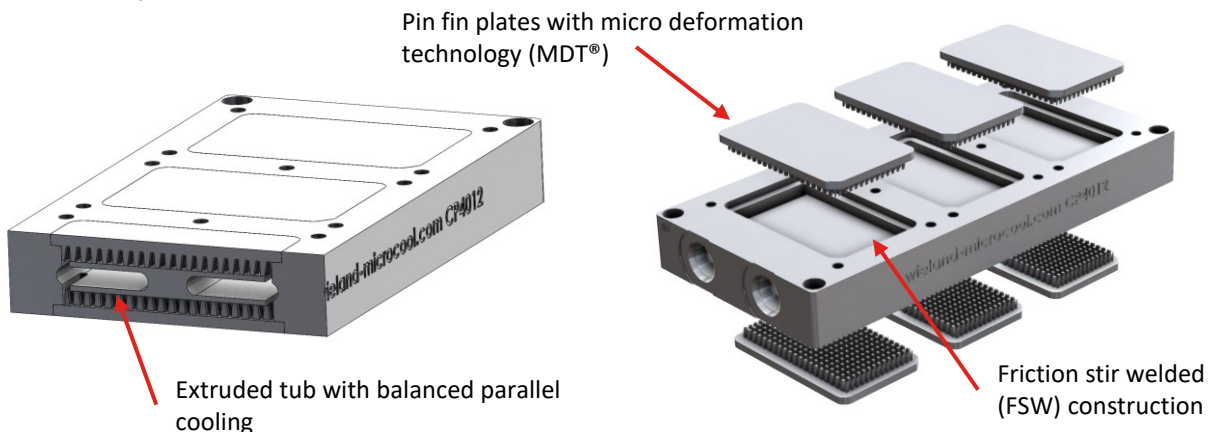
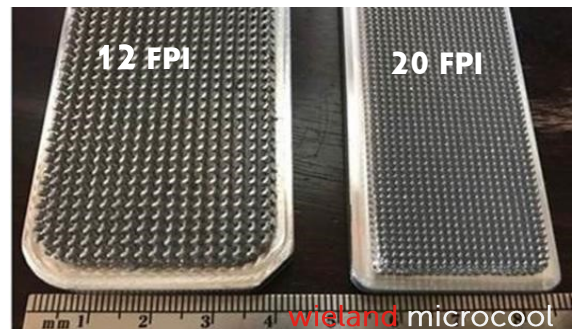
Using a 50/50 water-ethylene-glycol coolant with a flowrate of 12 L/min and a temperature of 25°C, the maximum power dissipation for the flat baseplate CAB450M12XM3 is measured at 750 W per position at a junction temperature of 175°C for a thermal resistance of 0.2°C/W for RΘJL (junction to liquid) http://www.how2power.com/newsletters/2010/articles/H2PToday2010_design_WolfSpeed.pdf

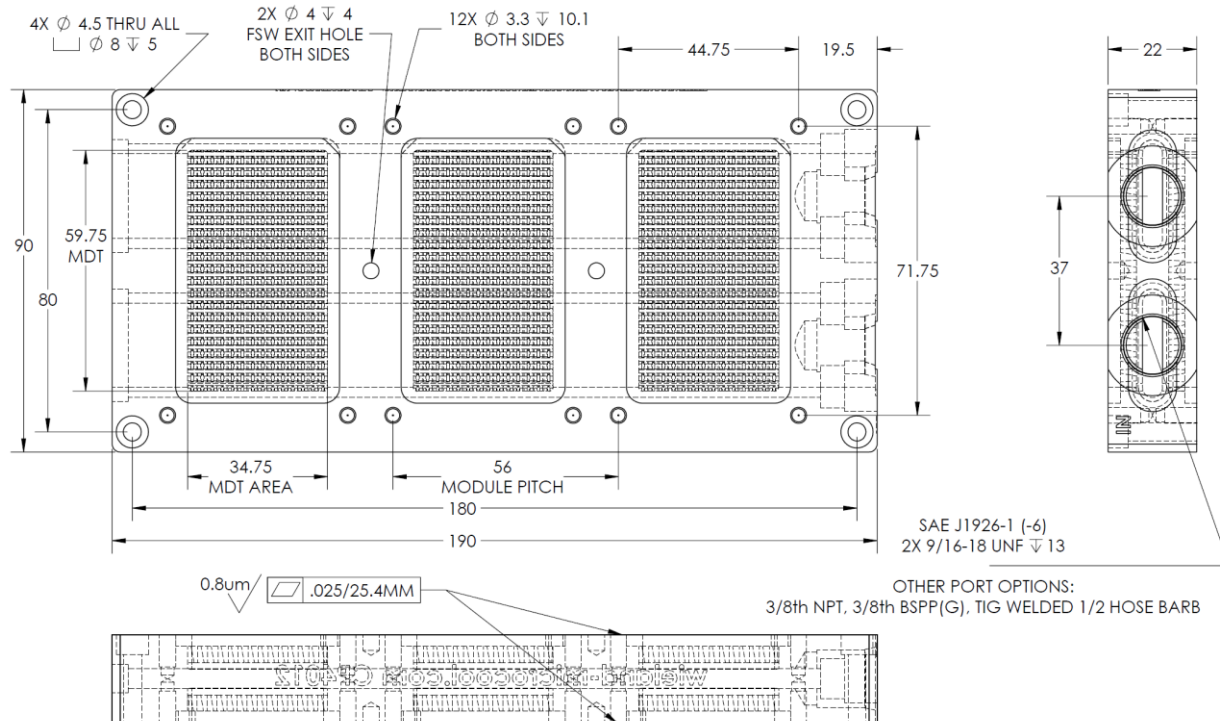
MDT In Line Pin Fin Options:

- 4 fin/inch (~2.4mm gaps) Best pressure drop
- 8 fin/inch (~1.2mm gaps)
- 12 fin/inch (~1mm gaps)
- 20 fin/inch (~0.5mm gaps) Highest performance

Custom Options (call or email):

- Length: Extrusion length can change to accommodate up to 8 IGBTs
- Ports: NPT/SAE/BSPP (G)/ Welded on hose barb
- Plating Options: Electroless Nickel inside and out available
- Double sided options



**NOTES:**

1. DIMENSIONS AND TOLERANCES IAW ASME Y14.5M - 1994
2. MATERIAL: ALUMINUM 1100-H14 (FINPLATES) / ALUMINUM 6061-T6 OR 6063-T6 (TUB)
3. 4MM TALL MDT IN LINE PIN FIN OPTIONS: 20, 12, 6x8 & 3x4 FPI (GAP/DIA 0.0, 1, 1.2, 2.4mm)
4. FINISHED ASSEMBLY MASS: 863 GRAMS

