

M3001 Series– Liquid Cooled Cold Plate

P/N M3001-1

Liquid Cooled Cold Plate

Specifications and Parameters

This cold plate is a deep-drilled type, allowing an optimal heat dissipation at a flow rate of 1.0 [GPM]. Due to the resulting 0.0103 [°C/W] thermal resistance at this flow rate, the cold plate can dissipate 2.6 [kW] with an average temperature rise of only 18.5 [°C] (between the cold plate's user interface and inlet fluid), by using a cooling fluid at an inlet temperature of 20 [°C].

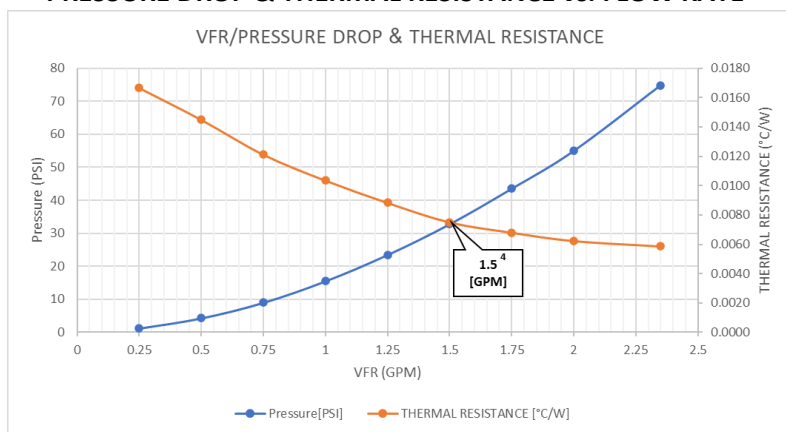
Design Features¹

- Two sides cooling
- Adaptable design platform
- Controlled Pressure drop (using internal orifices)
- High pressure (burst-proof)²: 300 [psi]
- Leakage proof³: 250 [psi]
- Pressure loss @ 1[GPM] : 15[psi] (see table below)
- Quick release valves
- Internal orifice
- Max weight: 6.6 [kg]



Performance Curves

PRESSURE DROP & THERMAL RESISTANCE vs. FLOW RATE



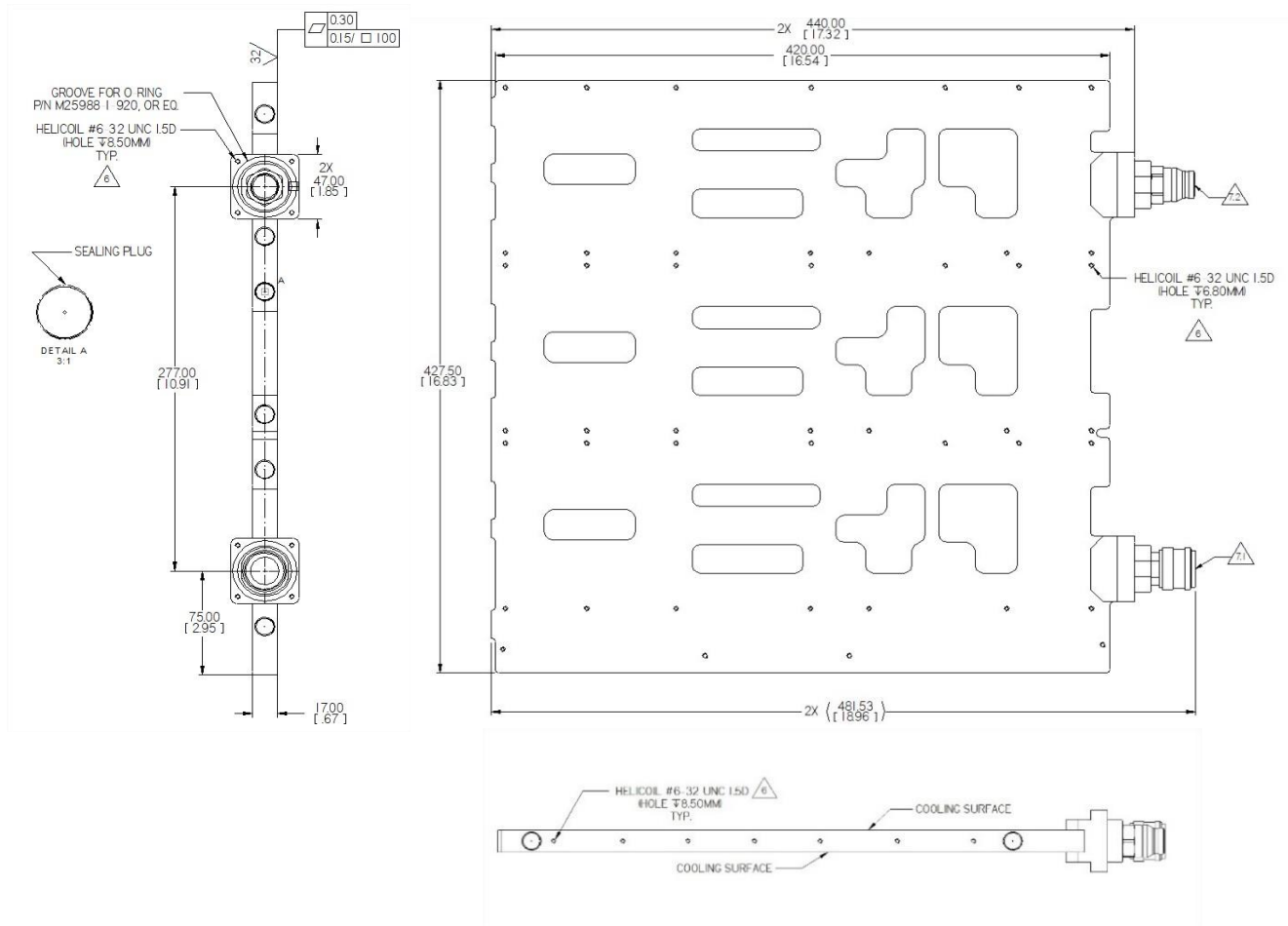
M3001-1		
Flow rate [GPM]**	R [°C/W]	ΔP (psi)
0.25	0.0167	1.17
0.50	0.0145	4.26
0.75	0.0121	8.97
1.00	0.0103	15.47
1.25	0.0088	23.44
1.50	0.0078	32.74
1.8	0.0070	43.49
2.00	0.0062	54.96
2.35	0.0059	74.81
0.25	0.0167	1.17

- ¹ Tested using 50% ethylene glycol + 50% distilled water.
Coolant with higher distilled water ratio will provide smaller thermal resistance.
- ² Pressure loss- 0.17 [psi].
Test duration- 10 minutes. Max allowed pressure drop- 0.25 [psi].
- ³ Tested in water bath for 5 minutes.
Success criteria was no bubbles.
- ⁴ Recommended working point- 1.5 [GPM].


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Outline Drawing



Notes:

1. Dimensions are in mm [In].
2. Tolerances: X.X +/- 0.2 mm, X.XX +/- 0.10 mm.
3. First angle projection:

4. Material: Al 6061, Thermal treatment T651/ T6511.
5. Finish: chromate conversion coating per MIL-DTL-5541, type I, class 1A.
6. Additional threads and lengths are optional according to customer requirements.
7. Hardware information:
 - 7.1. Coupler (inlet cooling):
 Manufacturer: "HAM-LET GROUP".
 P/N: QCE6-SS-B-FL37-3-8-R2.
 - 7.2. Nipple (outlet cooling):
 Manufacturer: "HAM-LET GROUP".
 P/N: QCE6-SS-SAES-3/8-R150.