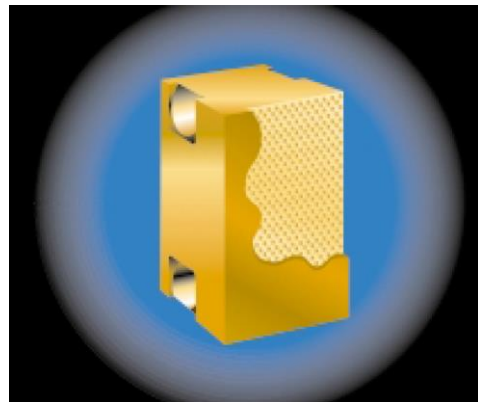


**Therma-Cube™ - Porous Metal Liquid Cold Plate**



**Cross Section Showing Porous Metal**

Aavid, Thermal Division of Boyd Corporation's Therma-Cube™ uses proprietary porous metal technology to greatly increase the surface area available for heat dissipation in compact liquid cooled systems. As heat is applied to Therma-Cube™, the heat is conducted from the outside, into the porous metal structure. Liquid flows through the porous metal structure, and absorbs the heat, transferring it away to a heat exchanger or heat sink.

The chart below shows some of the more common sizes that can be produced, however most Therma-Cubes™ are customized to fit specific applications for optimal performance. It is recommended that a filter less than 10 microns be used with Therma-Cube™.

**An Ideal Solution for:**

- ▶ **Laser Diodes**
- ▶ **Thermoelectric Modules**
- ▶ **Microprocessors**
- ▶ **Sensors**
- ▶ **Beam Collimators & Targets**

**PERFORMANCE**

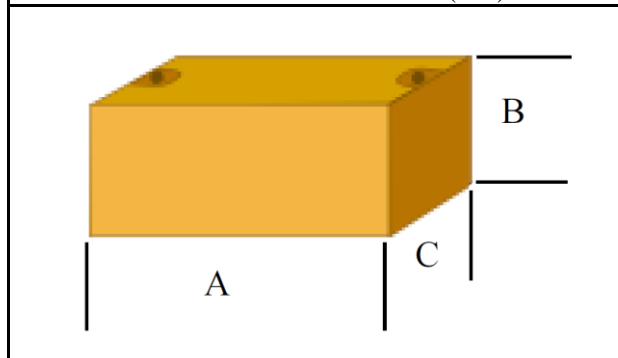
Therma-Cube™ provides superior performance for cooling heat fluxes from 100 W/cm<sup>2</sup> to 5 kW/cm<sup>2</sup> using water as the working fluid. Other liquids can be used depending the applications requirements.

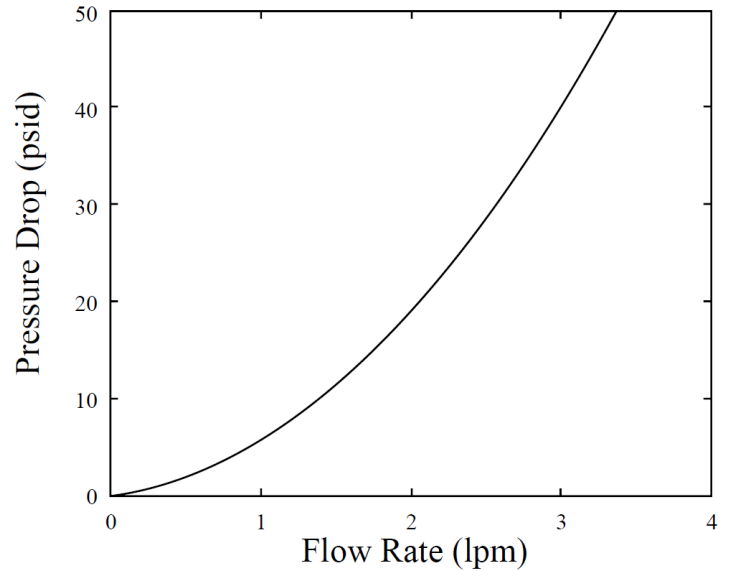
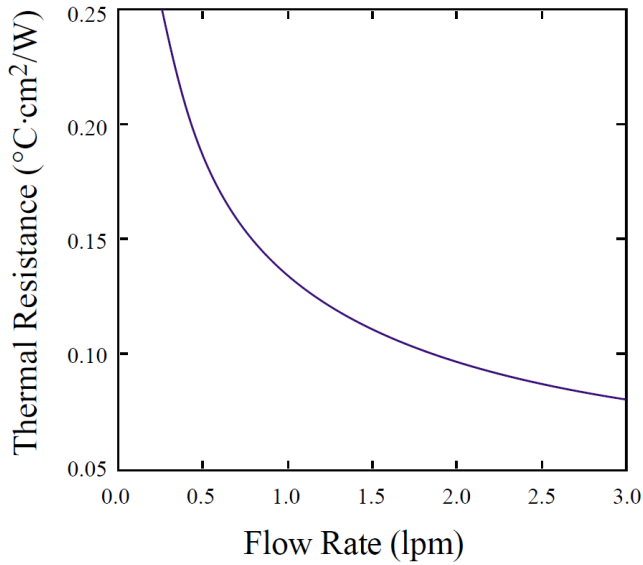
**DESIGN OPTIONS**

- ▶ O-ring Face Seal
- ▶ Hose Barbs
- ▶ Gold Plating
- ▶ Custom Mounting Attachments
- ▶ Coolants: Water, Refrigerants, Gases, and Other Liquids

SIDE A	SIDE B	SIDE C
0.250 (6.35)	0.400 (10.16)	0.335 (8.51)
0.415 (10.54)	0.415 (10.54)	0.415 (10.54)
0.792 (20.12)	0.420 (10.67)	0.415 (10.54)

Dimensions are in inches and (mm)





The charts above show typical thermal resistance and pressure drop data for a 1 cm by 2 cm Therma-Cube™. Other combinations of thermal resistance and flow are possible. For example, lower thermal resistance may be obtained although higher pressure drop will result.

Therma-Cube™ is based on Aavid's proprietary porous metal technology. Because of the highly effective heat transfer within the porous metal matrix, extremely low thermal resistance is a possibility. Aavid's proprietary porous metal bonding process results in a matrix with high thermal conductivity, making low thermal resistance a reality.

The internal architecture of Therma-Cube™ is quite scalable, making it possible to evenly cool a wide variety of geometries, including those on curved surfaces. Custom-designed porous metal-based heat sinks have been fabricated to cool areas from 0.05 in² (0.3 cm²) to 358 in² (2,310 cm²).

