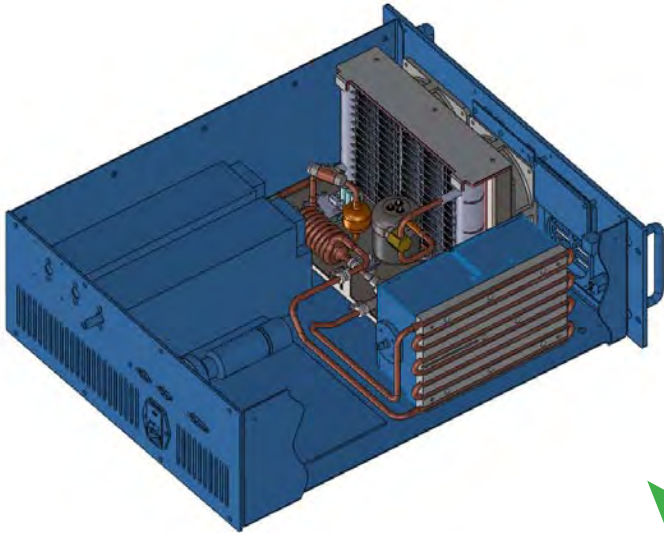




## Compact and Reliable Laser Cooling Solutions



*Cooling Module in 3U Chassis*

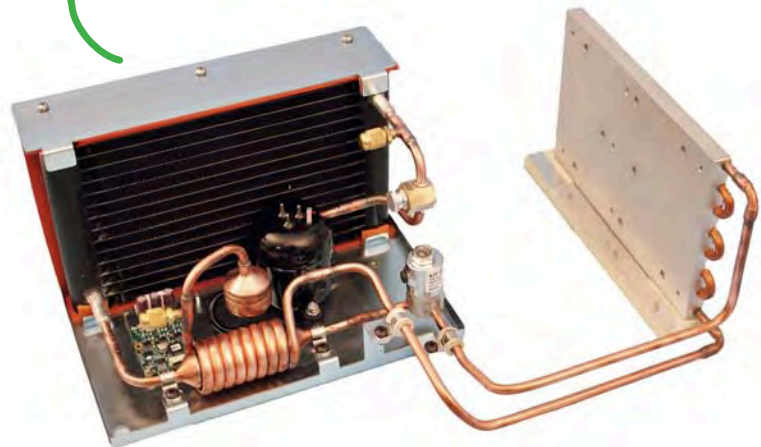
### Aspen Systems, Inc.

Aspen Systems supplies compact, reliable vapor compression cooling systems, specializing in applications where compact size and reliability are key parameters. We provide custom engineered or standard solutions to meet your cooling requirements.

### Direct Cooling Systems

Direct cooling systems feature refrigerant delivered directly to a cold plate, minimizing part count and maximizing thermal efficiency.

- No pumps or reservoirs
- 100-600 Watts of cooling
- Cold plates: 25°C to -40°C
- $\pm 0.1^\circ\text{C}$  temperature control
- Efficient isothermal heat transfer
- 4x to 6x more efficient than thermoelectrics
- Hermetically sealed system - no water leaks
- >90,000 hour MTBF



*Direct Refrigerant Cooling Module  
Ready for Chassis Integration*



*Aspen's Miniature Compressor*

[aspensystems.com](http://aspensystems.com)

*Aspen Systems is an ISO 9001:2008 registered company.*

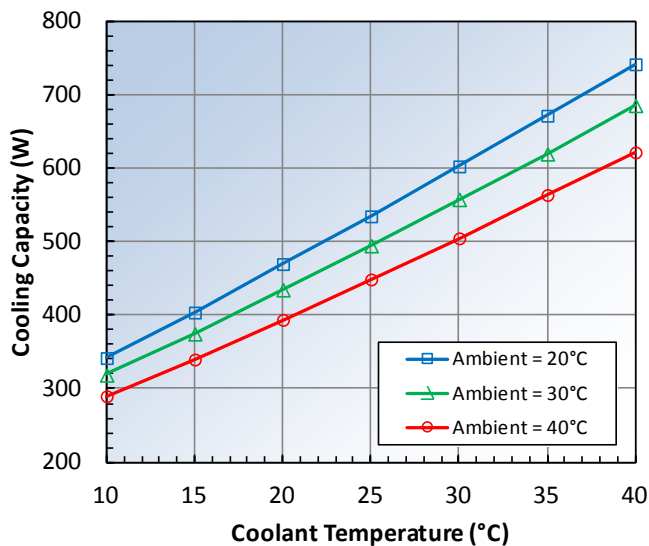


*Liquid Chiller Module Integrated into Customer's Chassis*

## Chiller Systems

Chiller systems deliver coolant to a secondary cold plate or heat exchange. Chiller systems offer ultimate high thermal performance and ultimate flexibility.

- 100 to 600 W of cooling
- $\pm 0.1^{\circ}\text{C}$  temperature control
- 4x to 6x more efficient than thermoelectrics
- Stand alone or integrated solutions
- Customer or Aspen integration
- >90,000 hours MTBF



*Typical Cooling Capacity*



*Liquid Chiller Module*

### Contact us today

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