



## PROJECT DETAILS

*Customer:* Prsym Inc.

*Application:* Laser Light Sources

*Technology:* CFD and High  
Density Die Casting

*Industry:* Display Technology &  
Visual Workplace

*Location:* Concord,  
Massachusetts

**PRYSM**

## THE DESIGN CHALLENGE

A company headquartered in California uses visual collaboration cloud where teams across the globe can create, share and innovate. The technology used is more than video conferencing and webinars. Prsym Inc. combines apps, content, video and the web into a single interface for data visualization.

Prsym Inc. began developing a new product using laser light sources. The laser sources are mounted on a base plate which is further mounted on a heat sink with fans. Heat flows from the device to the base plate then to the heat sink, gets sucked by the fans and eventually released in ambient air. The thermal target was very tight and the geometry required an advanced casting solution. While the thermal target for this design had to be adjusted due to physical constraints, the California team of Aavid, Thermal division of Boyd Corporation, was able to assist with finding the best thermal management solution using CFD analysis and high density casting process known as HDDC.

### THE AAVID SOLUTION

The analysis began by creating a thermal simulation model of a baseline concept which uses the fans and heat sinks tested by Prysm Inc. This particular array of laser sources would be under conditions such as forced convection and used at an altitude of 3000m above sea level. Aavid's team designed and optimized a heat sink to decrease the maximum temperature on the lasers. Offering the best thermal management solution for cooling these laser sources will not only help to perform better, but the lifetime will be longer. Multiple simulations were ran to find the most optimum solution.

In temperatures of 104 degrees Fahrenheit, the temperature drop across the base plate and ambient was approximately 43 degrees Fahrenheit. To further improve the thermal system performance, Aavid suggested bringing the fans closer to the base, and adding partitions between the two fans.

We at Aavid, helped to provide the best possible solution for a heat sink for Prysm's video walls.

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