

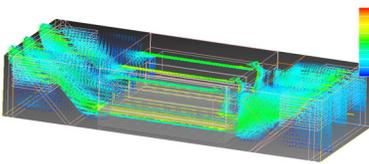
Industrial LED Grow Lamp *Design Case Study*



Introduction

An industrial grow lamp company chose Aavid, Thermal division of Boyd Corporation, to design and manufacture their hi-lumen industrial LED grow lamp.

The customer was a start-up company with limited resources. They provided clear goals and an aesthetically pleasing enclosure concept.

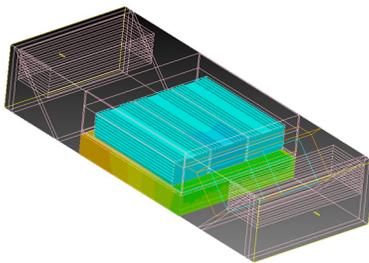


The Challenge

Responsibility for the thermal solution, internal packaging, structural support, and overall mechanical design were all placed in the hands of Aavid's team.

The design had to meet safety-rating requirements for moist environment with active sprinkler systems. It also had to be quiet and able to be hung from overhead supports.

The design had to compete on both cost and product life in a fast growing market.



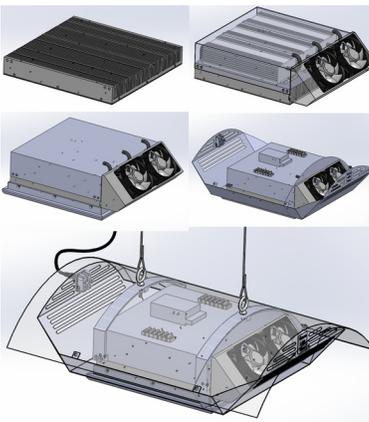
The Solution

Aavid worked closely with the customer's team to generate concepts, design the product, source components, and fabricate prototypes of the first generation device.

The cooling airflow was routed through the heatsink to cool the LEDs and through a second chamber to keep the LED drivers cool.

The thermal performance of the system was designed so both the LEDs and the drivers are kept cool enough to exceed the 10 year product life target.

To minimize weight, the product design used the heatsink as the mechanical backbone of the system. This created a structurally sound product and eliminated the need for any sort of frame, supports or extra bracing.



Specialized sheet metal locking mechanisms and extruded thread features were designed into the heatsink, which eliminated the need for excess machining and hardware. Aavid's experience with manufacturing processes meant we could add design details that reduced the cost of material, component manufacturing, and assembly.

The Deliverables/Results

After manufacturing the initial prototypes, we performed system level testing to verify the thermal performance of the design.

As the design progressed to the production-ready stage, Aavid helped the customer prepare for high volume manufacturing, including helping them identify suppliers.

Aavid provided turnkey design services to a start-up company which enabled them to bring their product to market without the need to staff their own design department. Aavid and the customer are now working together on concepts for a smaller product for the home market.