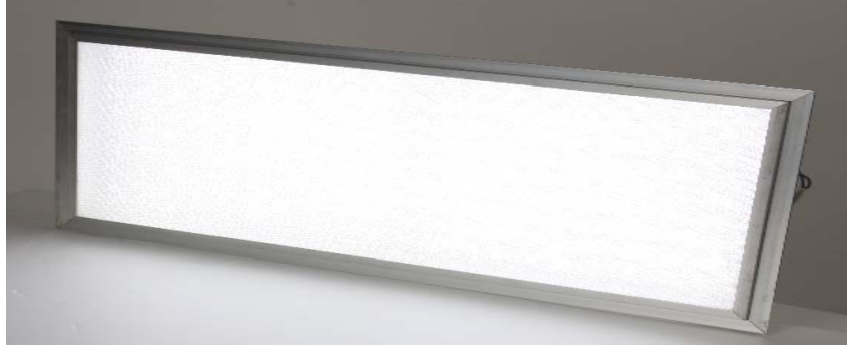




Technology 20: High Efficiency LED Lighting



LED lighting applications offer advantages over competing technologies (e.g. incandescent, florescent, and HID) in areas of efficiency, lifespan, durability, and color stability.

Luminature has developed technology improvements in three areas applicable to LED lighting applications.

- 1) Thermal Management – Using a non-conductive liquid to cool LED devices, higher efficiency and better light color are maintained at lower cost and less bulk than traditional metal heat sinks.
- 2) High Efficiency AC Power Control System - LEDs are inherently DC while most architectural and industrial applications are inherently AC. Luminature has developed a high efficiency AC power control system for LED lighting applications.
- 3) High Efficiency Optical Diffusion Sheet - LEDs inherently have a relatively narrow luminous intensity distribution while many lighting applications (e.g. office lighting) require a more diffuse distribution. Luminature's diffusion sheet offers luminous efficiency of 91% compared with 70% typically available.

Cost:

Luminature products can be purchased as finished product for interior architectural lighting applications or the technologies can be licensed from Luminature for incorporation into other manufacturing applications. Wholesale product pricing (F.O.B. Manufacturer) for interior lighting products with luminous flux of 2100 to 4200 lumens, range from the mid \$100 to the mid \$200s. Licensing opportunities are handled on a case-by-case basis.

Development Status:

Fully functional prototypes have been developed. OEM manufacturing relationships are being established with planned capacity of 100,000 units per month and to have full production capacity by Q3 2009.

IP Status:

A Korean patent has been issued for the thermal cooling technology and Korean patents are pending for the AC power control system and diffusion sheet.

Partner Opportunities:

Luminature is interested in reseller and distributor arrangements with companies and independent sales reps with broad market reach in the United States. The company is also interested in technology licensing arrangements with manufacturers of LED lighting products and equipment.

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