



Lighting Research Program



Program Advisory Meeting

September 15th and 16th, 2004

**Funded by California Energy Commission's
Public Interest Energy Research (PIER) Program**

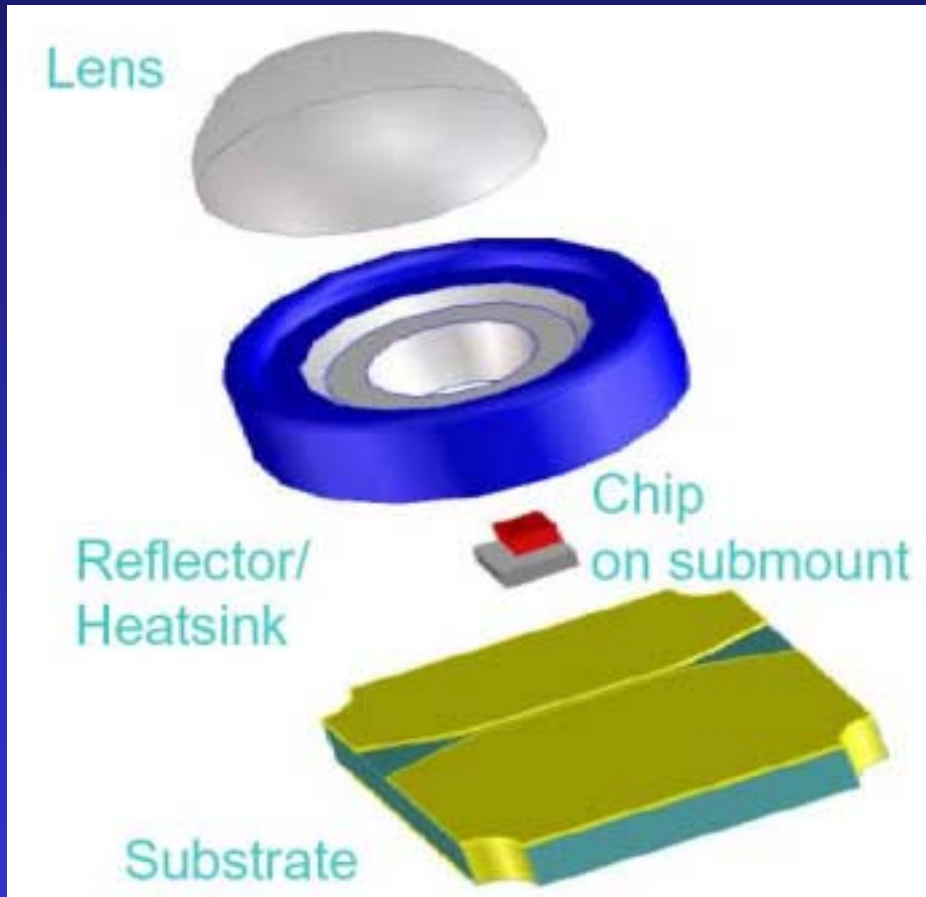
LED Task Light



- **Concept:** A high performance task light that uses state-of-the-art LED technology and thermal management technology.
- **Solution:** Lawrence Berkeley National Laboratory has assembled four manufacturers to develop the product. Permlight is prototyping the thermal management assembly board. Advanced Transformer is making the necessary ballast with variable intensity. Cree Lighting will provide the LEDs. Luxo will serve as the luminaire manufacturer, developing designs to meet both the US and European markets.

LED

Industrial Partner: CREE

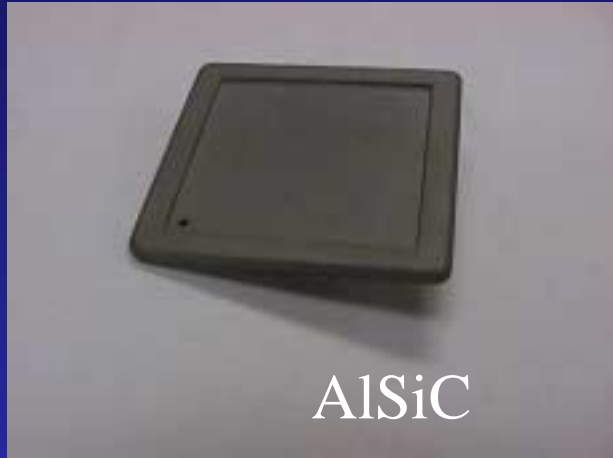


	<u>Expected</u>	<u>Realized</u>
lpw	40	30-35
CRI	>85	~70
Color temp.	3500	6000



Thermal Management / Ballast

Industrial Partner: Permlight / Advance Transformer



Expected

AlSiC with Graphite core

Fins

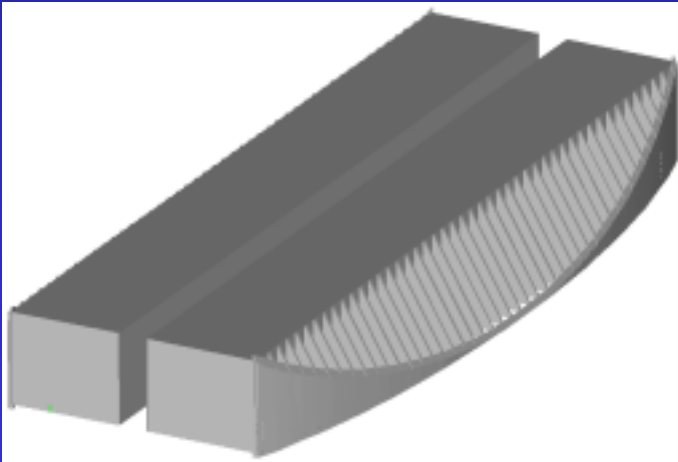
Dimming

Realized

Al core board

No fins

Dimming



Luminaire

Industrial Partner: Luxo



Expected

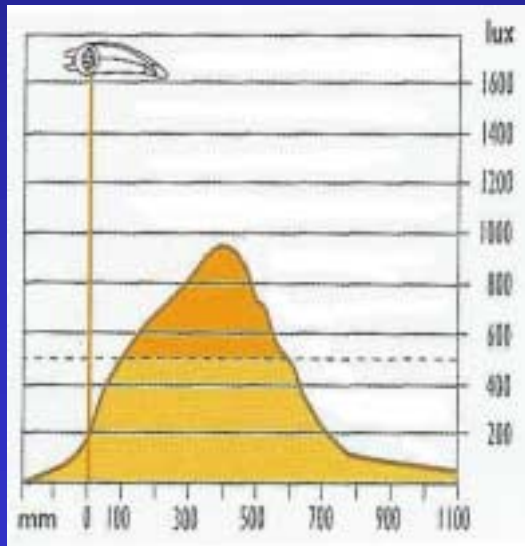
Asymmetric light distribution

Cost competitive design

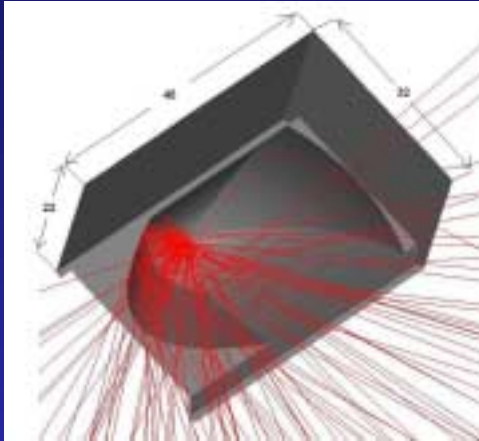
Realized

Replicated expected distribution

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Optics for LED

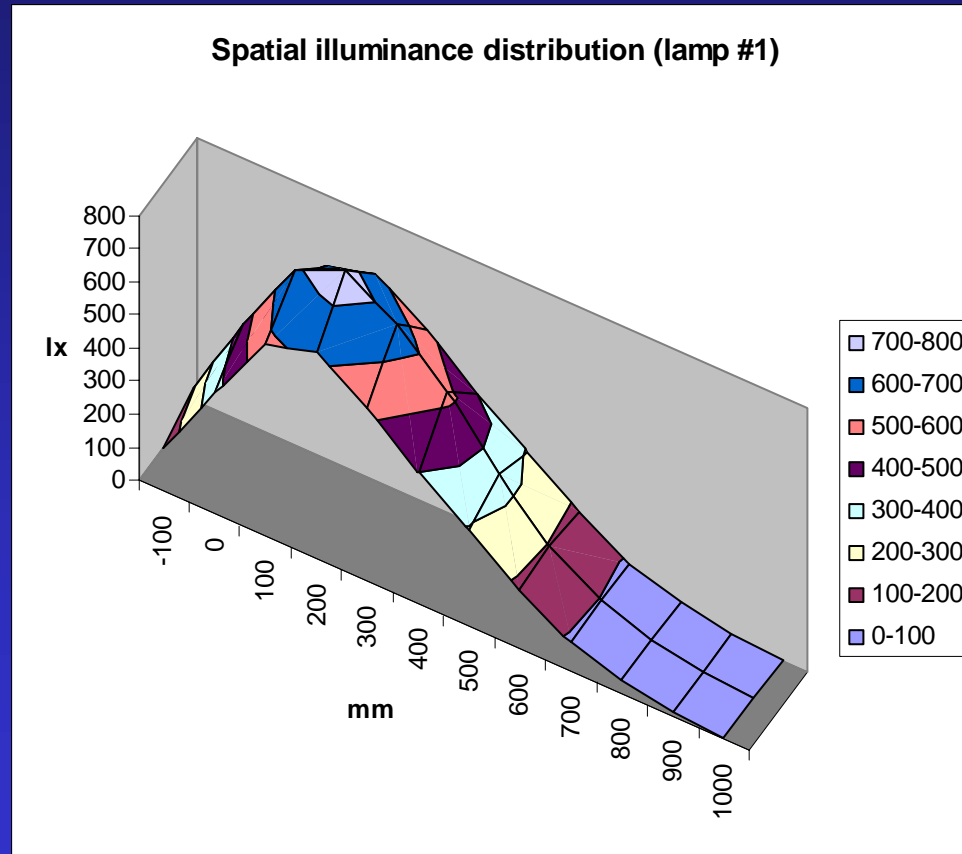


Optics – ray trace generated

Materials – stereolithographic production
-- vapor distribution coating



Spatial Distribution





Conclusion:

LED's are able to replace more efficacious CFL's in certain applications, because of the following benefits:

- Equal or better optical control
- Ease of dimming
- Introduction of thermal management solutions and
- The costs continue to decrease