

PHILIPS

Illuminetix Inc.

Manufacturer's Representative

Philips Lighting Company

Philips Lighting Electronics (Advance Transformer)

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LED technology – A New Era

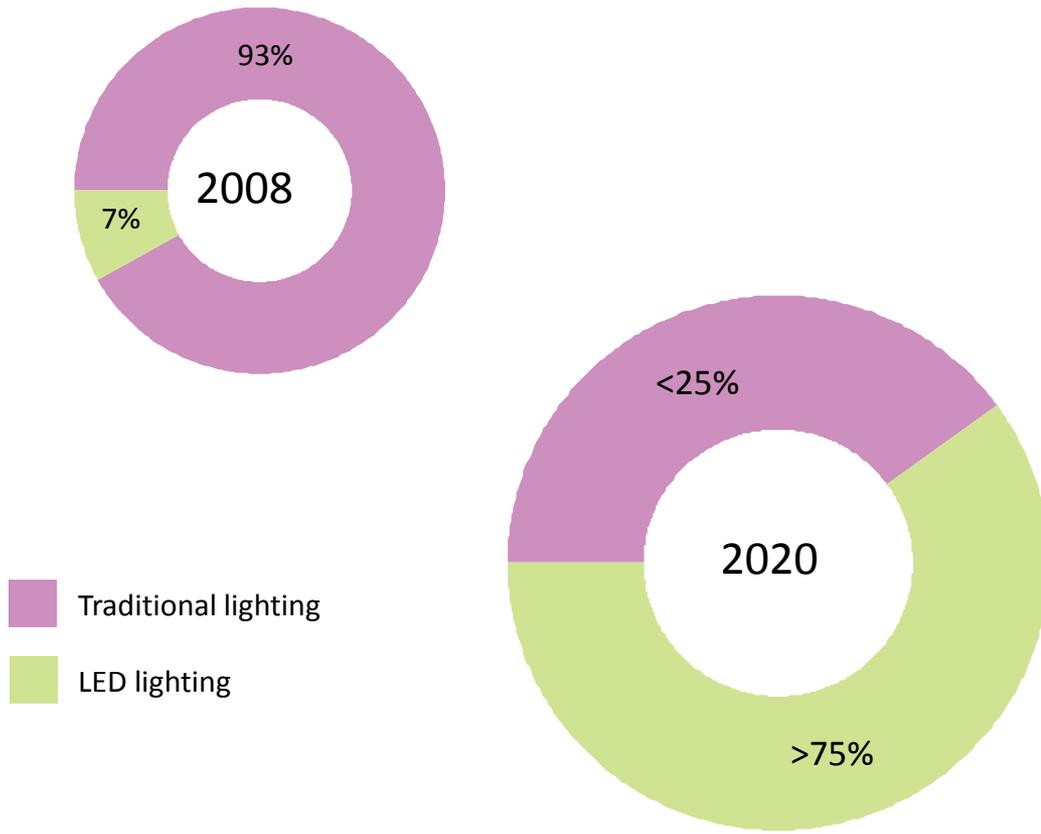
*Solid state lighting is “a pivotal emerging technology that promises to fundamentally alter lighting in the future. No other lighting technology offers as much potential to save energy and enhance the quality of our building environments, contributing to our nation's energy and climate change solutions.”**

– The U.S. Department of Energy's
Energy Efficiency and Renewable Energy division

* <http://www.reuters.com/article/gwmBuildings/idUS178093055120090611>

The Digital Revolution

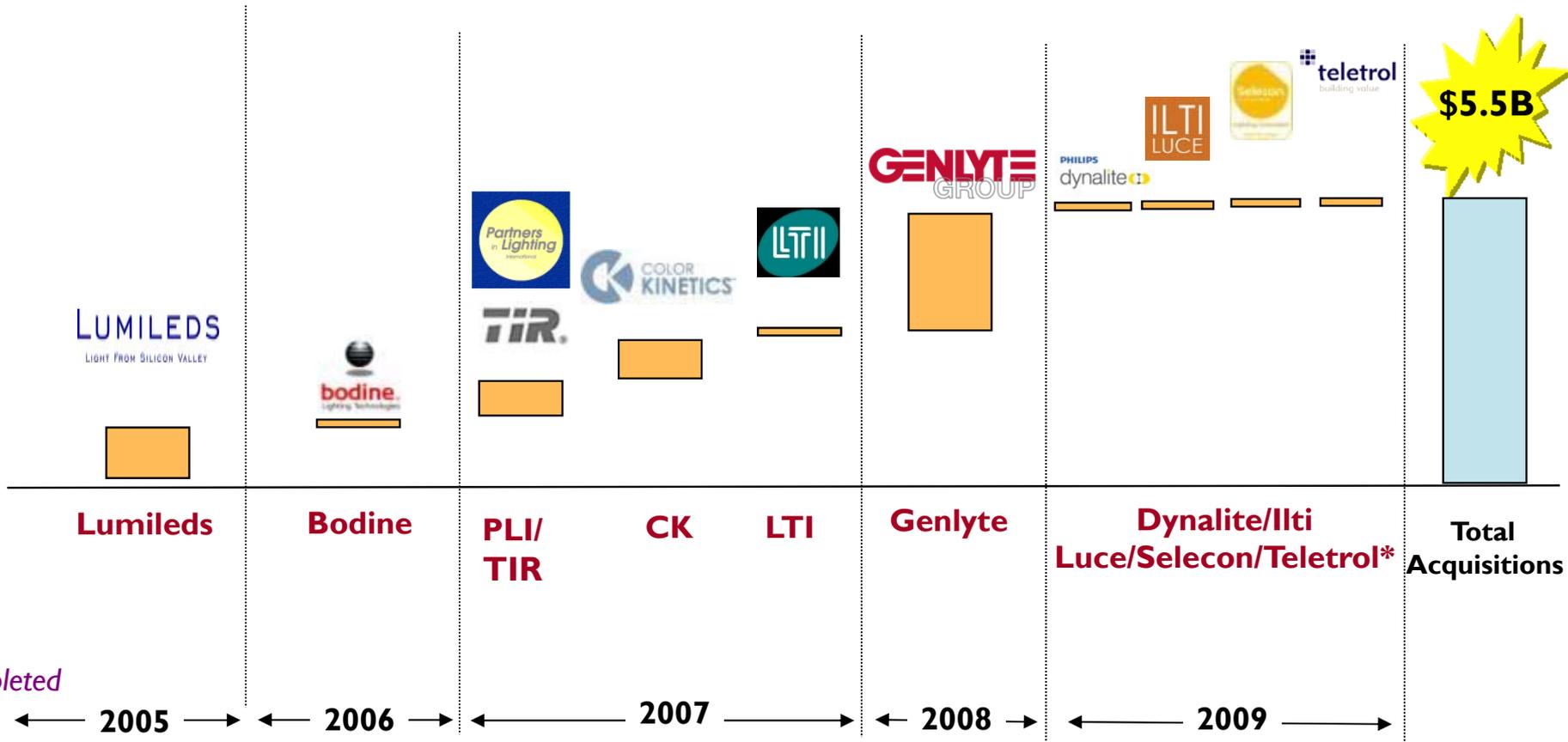
*LED lighting is transforming the entire landscape**



*Market estimate based on internal Philips study



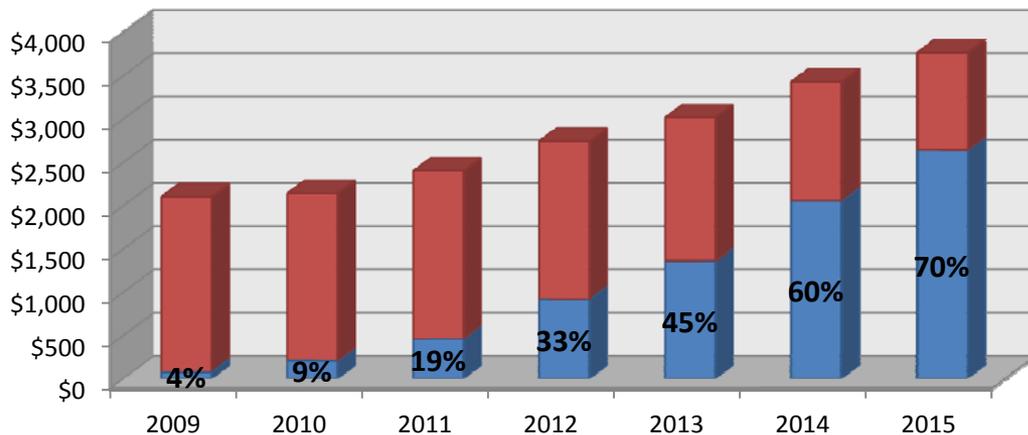
What do the world's Largest Lighting Manufacturer's think about the future of LED?



#1 lighting manufacturer Globally and in North America

LED technology – What makes LED a good solution?

- Extended retrofit cycle
- Cost of energy
- Cost of maintenance
- Quality of light
- Solution is viable today



**LED will Double
the \$ in the lamp
market!!**

■ LED sales

■ Conventional sales

Energy Savings and Environmental Impact of replacing 60W Incandescent with an LED

- DOE projected there are approx. 971M 60W A-19 sockets (2010).
- Estimated residential usage: 1.9 hrs/day, or about 700hrs/yr.
- 60W A-19 → 10W = 83% savings .
- Convert 60W → 10W L Prize winner → save approximately 35 Terawatt-hours of electricity in 1 year, and avoid 20M metric tons of carbon emissions.
- national AVG KWH rate: 9.7 cents=\$3,296,545,000.00 savings
- Hawaii AVG KWH rate: 27.86 cents (U.S. energy information Administration feb 2011 latest published as of 8-2011)

Source: http://www.lightingprize.org/about_ssl.stm



Reduced Maintenance

LPACK™
LED WALLPACK



The RAB LPACK retains 70% of its initial lumens after 50,000 hours.

HPS

2

Relampings



Metal Halide

2

Relampings



CFL

5

Relampings



Incandescent

50

Relampings



0

10,000

20,000

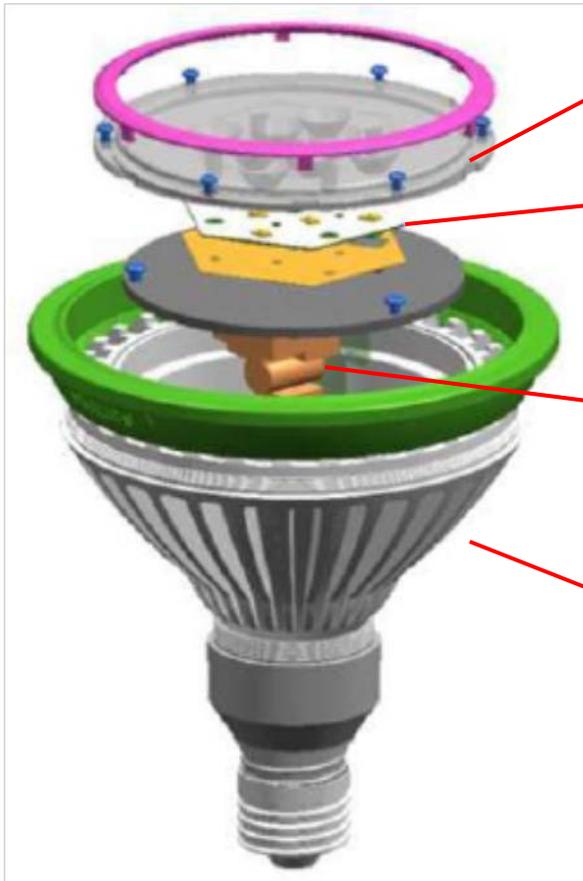
30,000

40,000

50,000
Hours



What is a LED – Design Drivers Lamp = Fixture



Lens / Optics

- Defines Beam Angle
- Portrays Beam Uniformity

LED Packages

- Defines Lumen Level
- Minimizes Lumen Depreciation--Life
- Optimizes Color Temperature--Binning
- Provides Color Consistency

LED Driver

- Defines Amps and Watts
- Provides Dimmability Function
- Affects Lamp Component Life

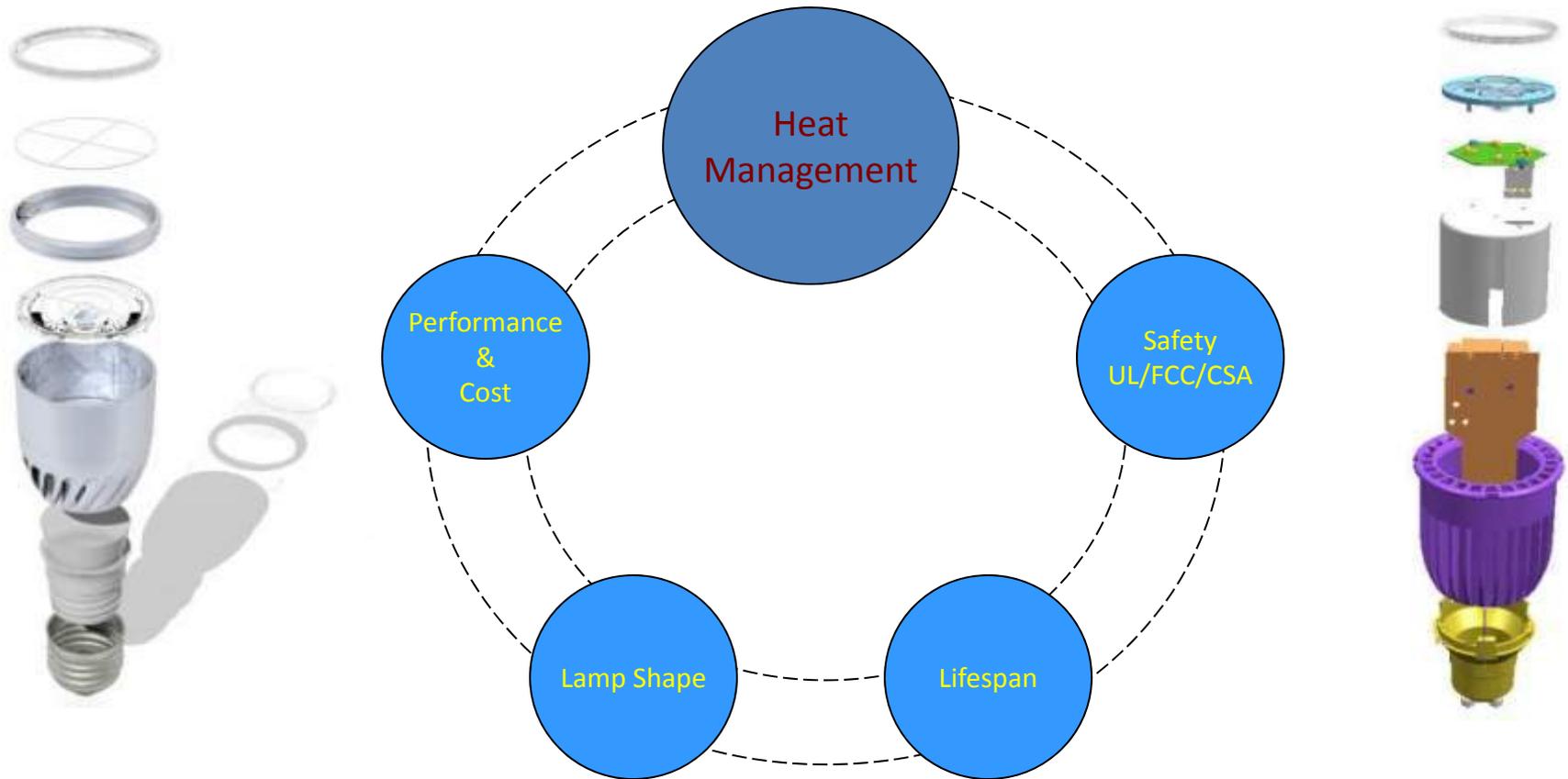
Lamp Housing

- Removes Heat
- Limits Lumen Output
- Limits Wattage
- Portrays Lamp Aesthetics

• **These impact price and performance**

• **Philips is the only major MFG that owns all of these process.**

What is a LED – Expertise required on many levels



Changing one aspect of the lamp requires reassessment of all.

Opportunities for LED retrofits

- **What is an *ideal application* for LED?**
 - **Hard-to-reach areas due to extreme long life**
 - **24/7 operation due to significantly reduced energy consumption**
 - **Areas and industries where Halogen and incandescent are still widely used. (i.e. Hospitality and Retail)**
 - **Color fading concerns are minimized due to lack of UV**
- **Where should a LED *not* be used?**
 - **Emergency Egress fixtures on generator... (check with manufacturer for compatibility)**
 - **Outdoor applications (unless specified by Manufacturer)**
 - **Enclosed fixtures- (unless specified by Manufacturer) HEAT**

