



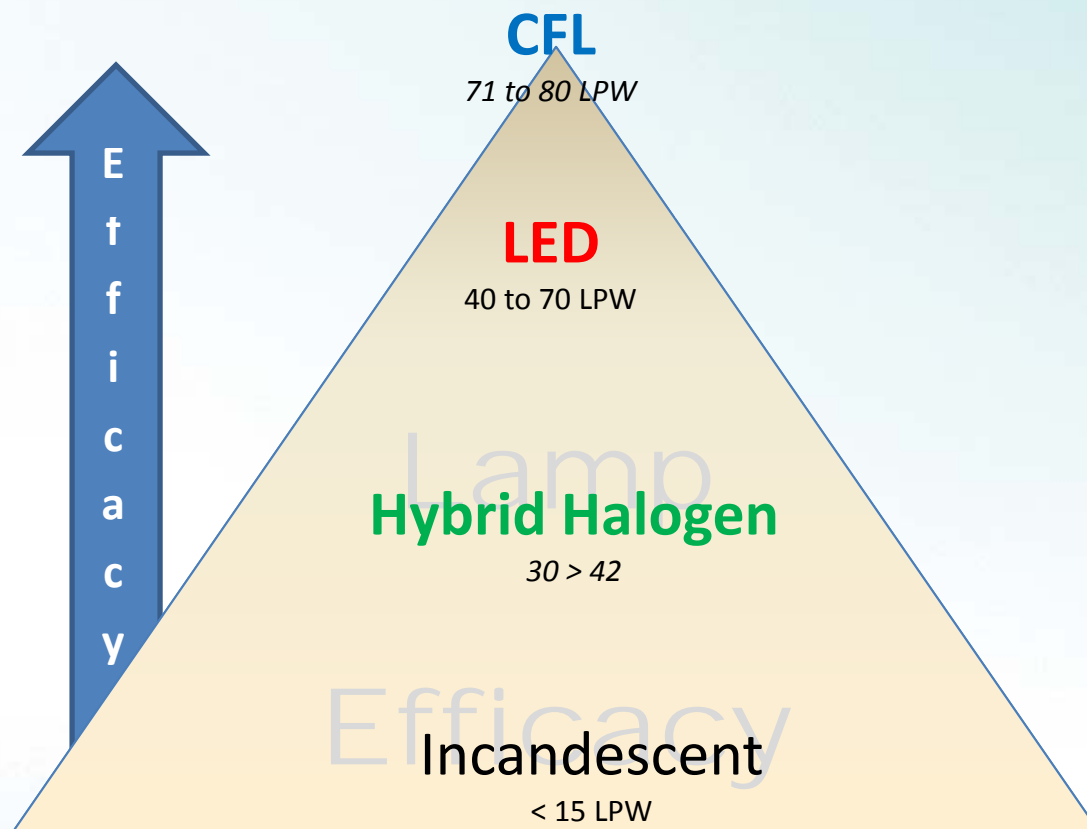
## PANEL DISCUSSION



Jim Crowcroft  
VP of Marketing; TCP Inc.



## ***MSB General Service Lamp Technology / Performance Pyramid***



# CFL's and EISA

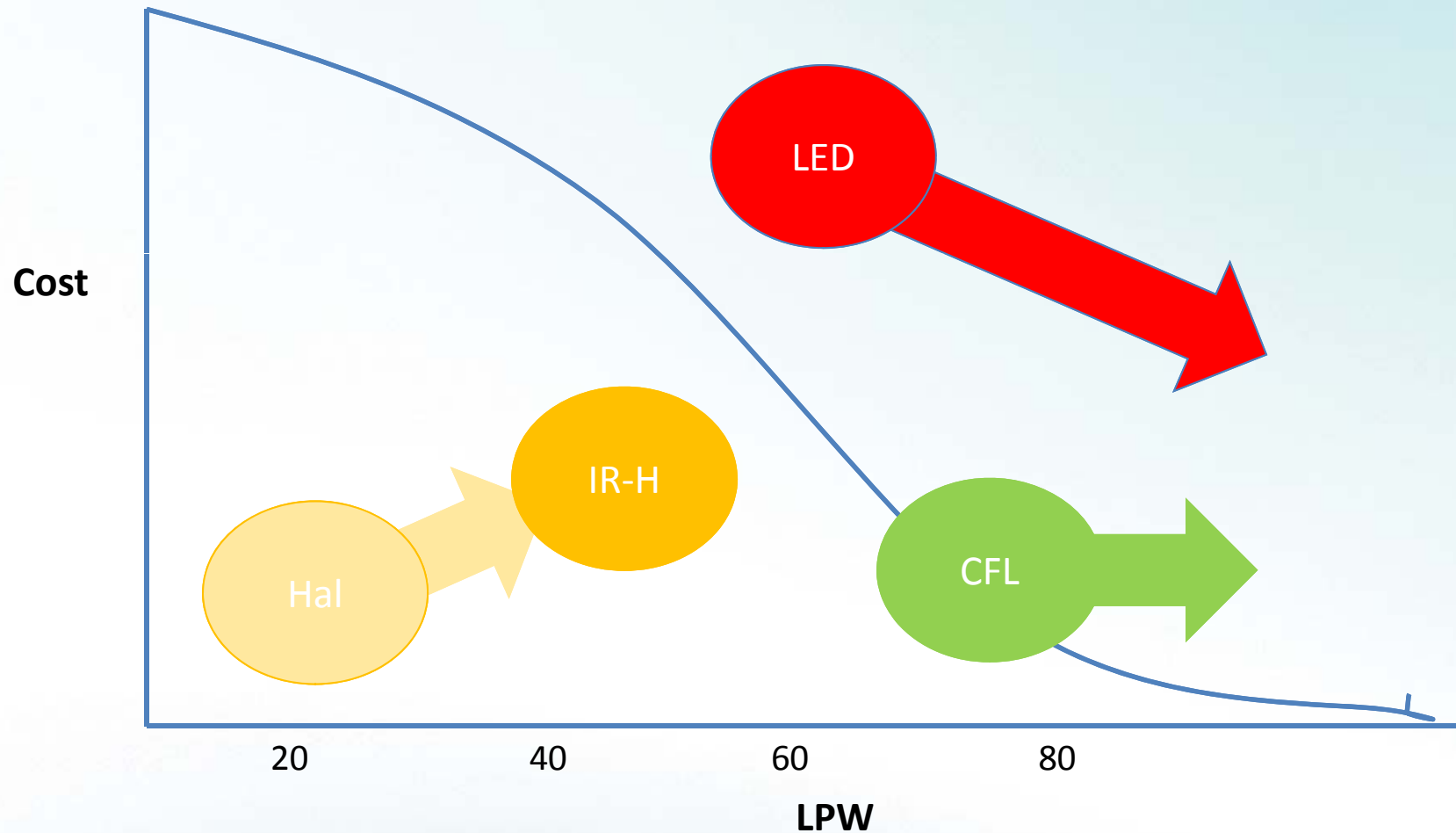
***CFL's provide the best cost/energy savings potential for MSB general service lighting applications***

- Continued growth in CFL sales and saturation will continue to yield enormous energy savings and carbon reductions
- ***...But the consumer market is not transforming fast enough:***
  - Today, 3 of 4 bulbs sold are still incandescent
  - CFL sales have plateau'ed.
  - Significant energy savings potential is unrealized
- And, LED replacement lamps are not yet competitive substitutes.

# LED Lamps as a Solution?

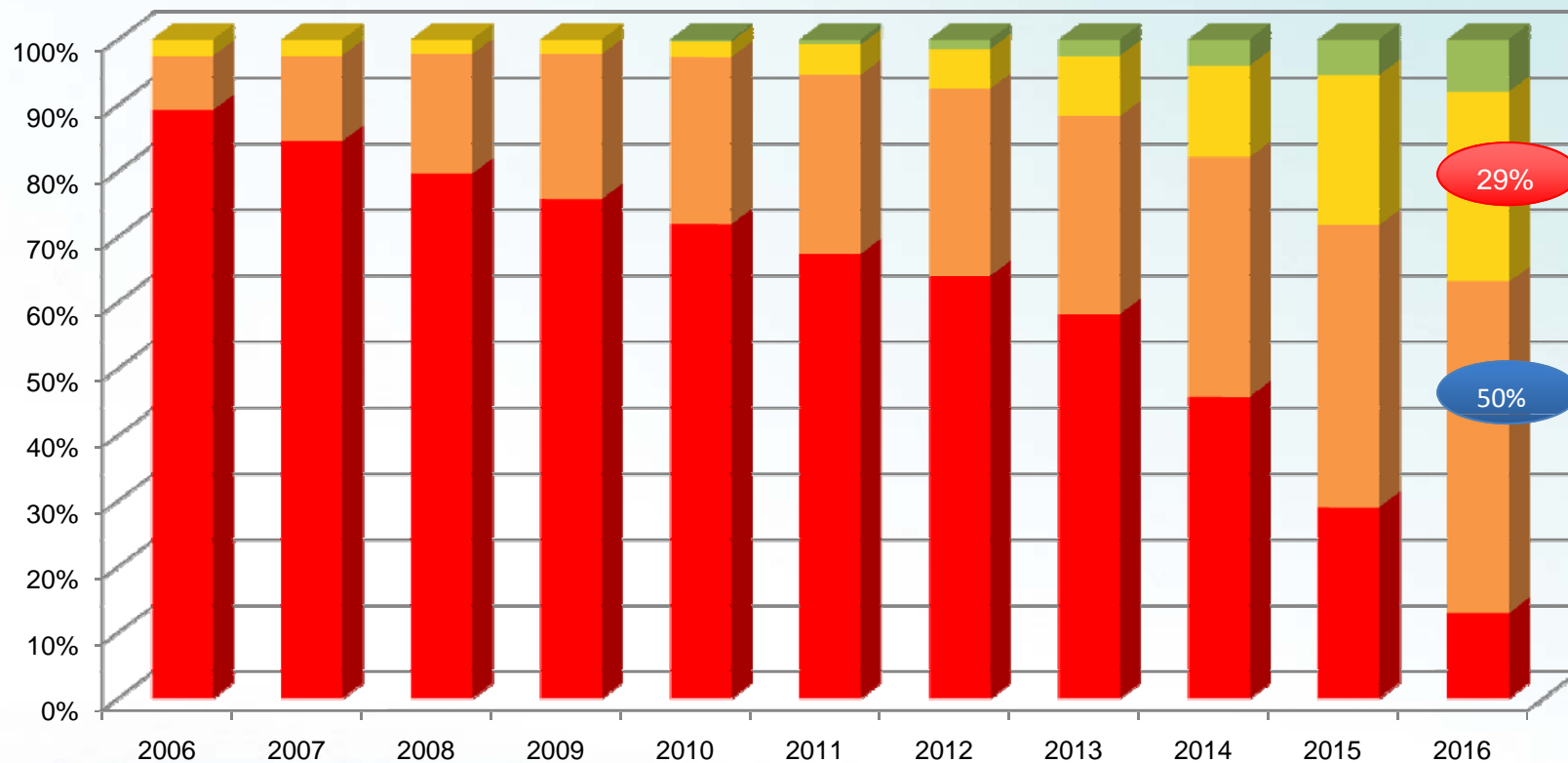
- High volume sales of replacement LED lamps are still some years off
- Cost is a big barrier – Retail price points on some current LED lamp products are \$50/unit or more
- Current LED replacement lamps perform poorly in most general lighting applications compared to CFLs
- **LED's are excellent alternatives for directional lighting applications**

# MSB General Service Lamp Technology Future Positioning



# MSB Lamp Forecast

■ Incandescent ■ CFL ■ Halogen ■ LED



Source: NEMA; Industry Data; TCP Estimates

*Consumer Concerns About CFL's...*

**“CFL’S Don’t Fit Some Fixtures”**

**“CFL’s Don’t Dim Very Well”**

**“CFL’s Are Slow to Light Up”**





## ***TCP's Micro-Size T3 & T2 CFL's***



13 watt



13 watt



13 watt







## ***TCP's New "Full Springlamp" Design***



Previous  
13 watt



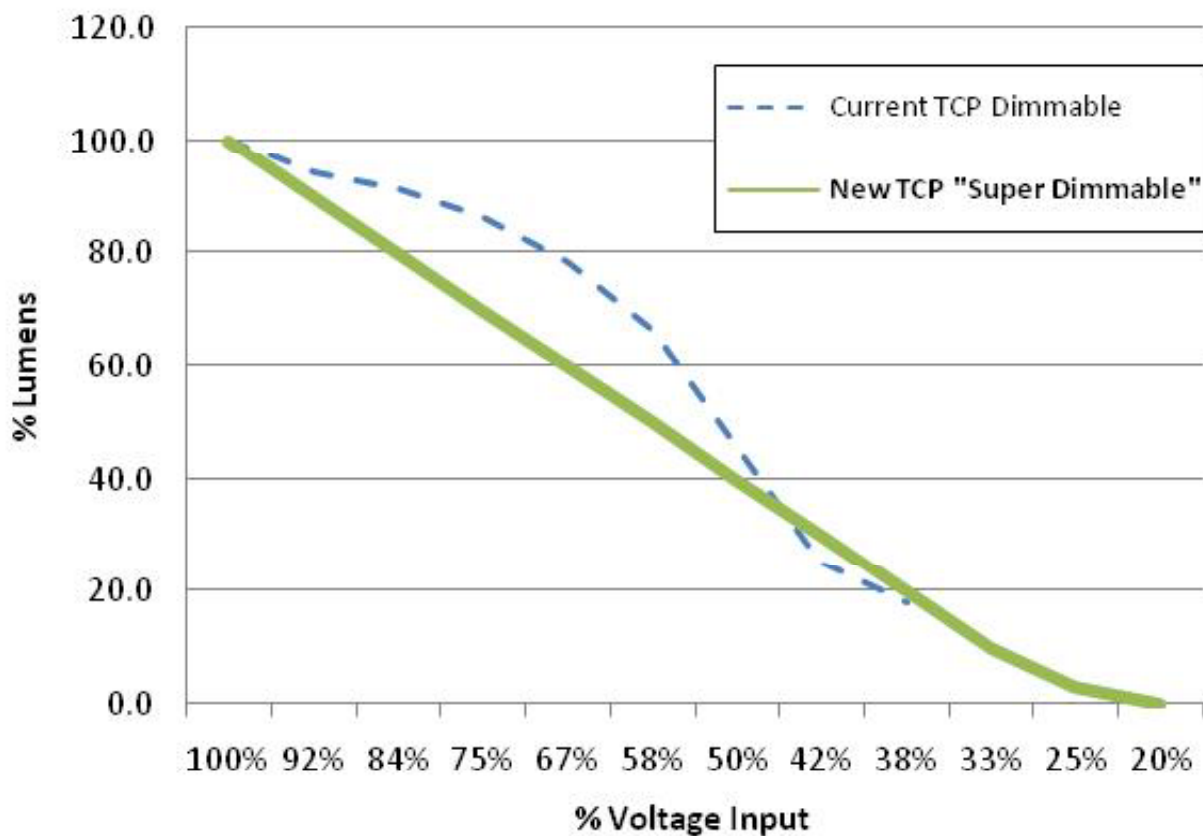
TCP T3  
13 watt



# TCP's TruDim™ CFL

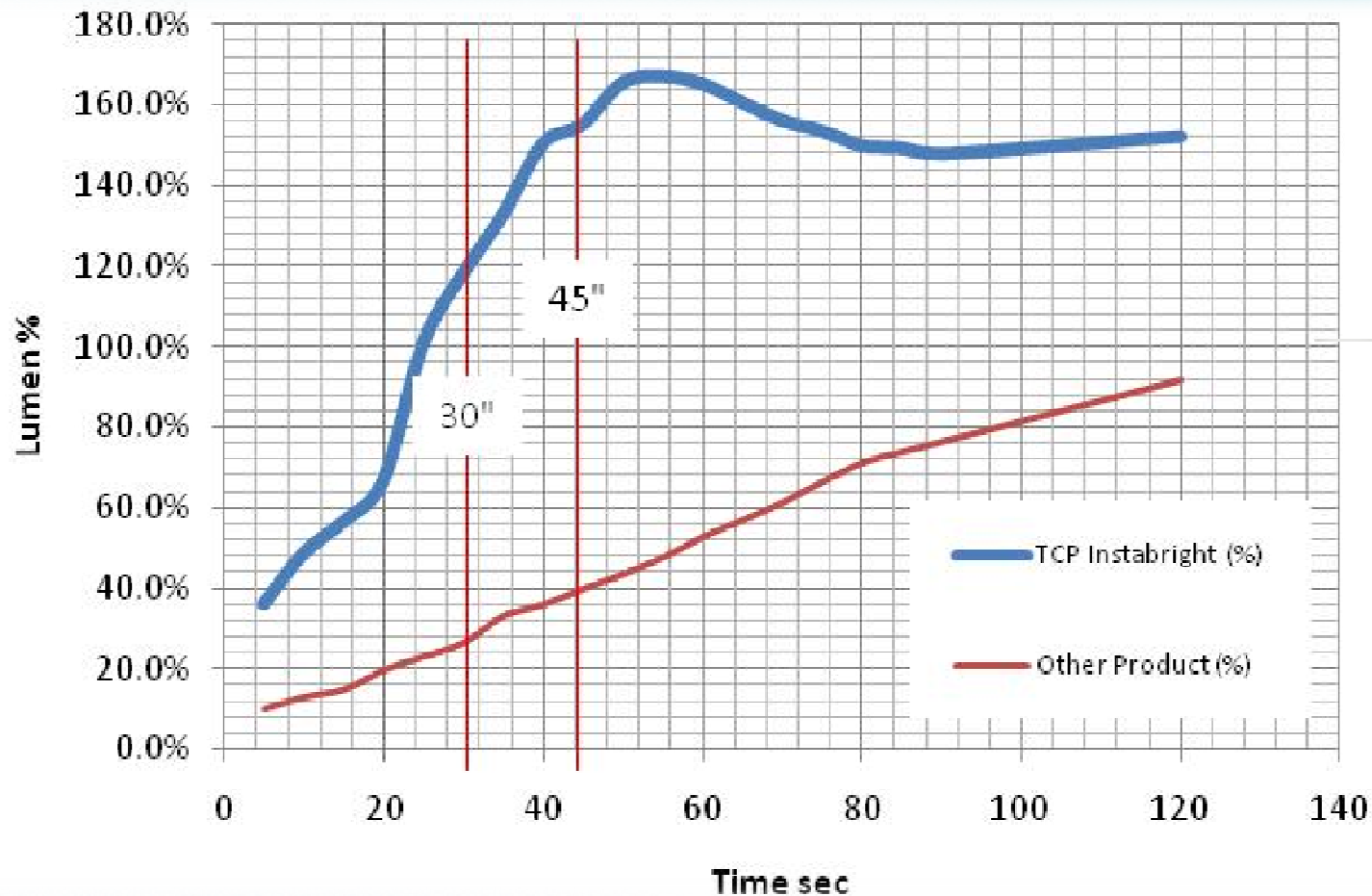
Technology by TCP

## Comparison: Dimming Profiles





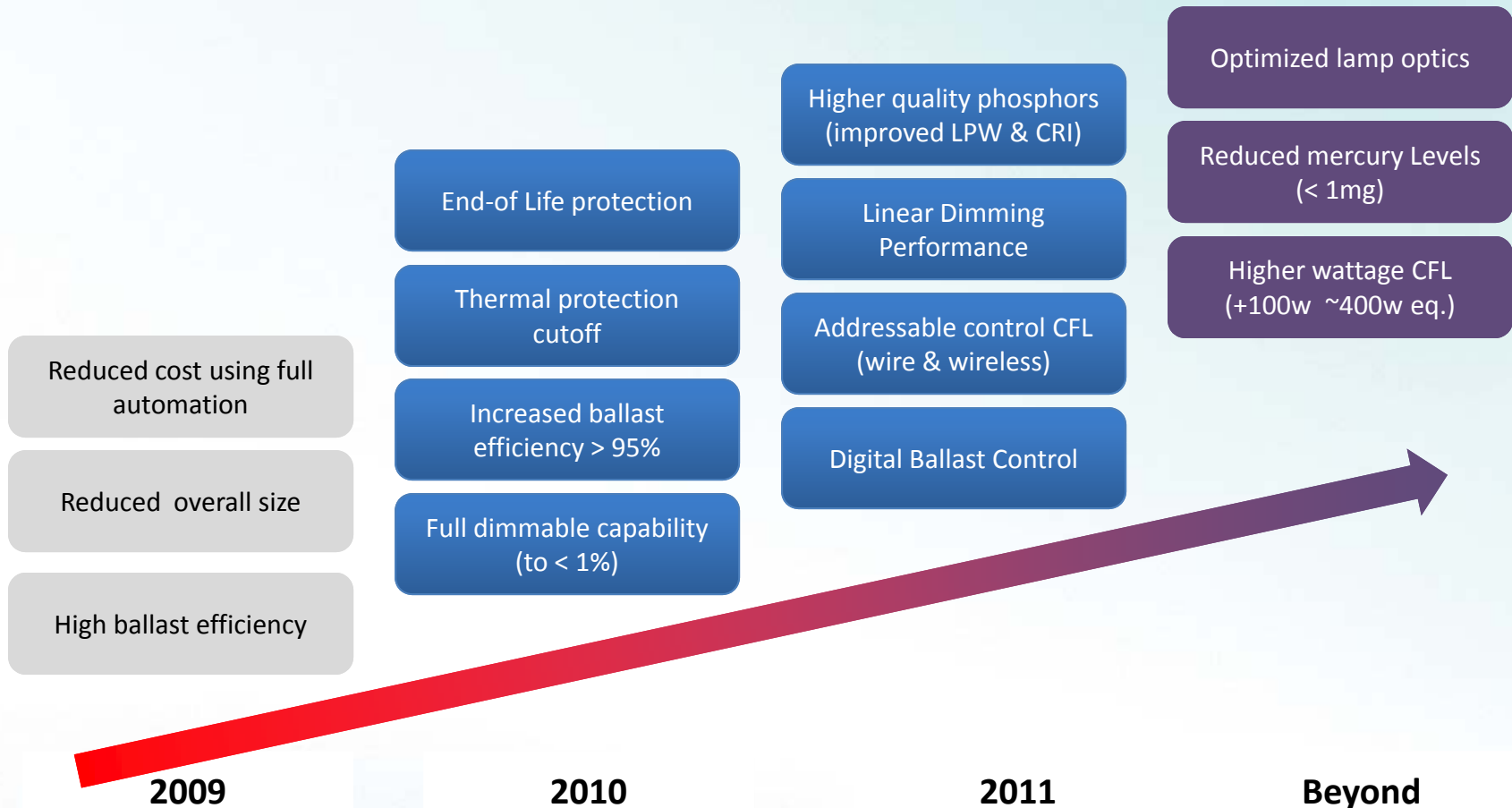
## ***TCP InstaBright G3™ CFL***



**TCP InstaBright G3 Run-Up Time Comparison**



## TCP CFL Product Technology Roadmap





***Zigbee Protocol  
Technology***



# Comparing Lighting Technologies



***CFL's***

VS.

***LED's***



✓ High Lumen Per Watt



✓ (Size) Miniaturization

✓ Lower Initial Purchase Cost



✓ Long Life

✓ Omni-directional Dispersion



✓ Beam Angle Control

✓ High Wattages



✓ Vibration Resistance

# Comparing Lighting Technologies



***CFL's***

vs.

***Halogen***



✓ High Lumen Per Watt



✓ Incandescent Replacement

✓ Lower Lifecycle Cost



✓ Fully Dimmable

✓ Multiple Color Temperatures



✓ Best Color Rendering

✓ Long Life



✓ Low Environmental Impact





# EISA - Product Comparison

TODAY'S INCANDESCENT WATTAGE	TODAY'S INCANDESCENT LUMEN OUTPUT (TYPICAL)	TCP CFL WATTAGE / LUMENS	TCP IR HALOGEN WATTAGE / LUMENS	TCP LED WATTAGE / LUMENS
100W	1690	23W 1650 LUMENS	50W* 1600 LUMENS*	N/A
75W	1170	18W 1300 LUMENS	40W* 1200 LUMENS*	N/A
60W	850	13W 925 LUMENS	30W* 850 LUMENS*	12W* 850 LUMENS*
40W	475	9W 600 LUMENS	N/A	8W 450 LUMENS

\* Available 2011

ENERGY EFFICIENCY



COLOR RENDERING



LOWEST INITIAL PURCHASE COST



COLOR TEMPERATURE CHOICES



HARD TO REACH PLACES



LOWEST ENVIRONMENTAL IMPACT





## *TCP's Unique Modular Hybrid IR Halogen Lighting System*

- 2012 E.I.S.A. Compliant Halogen Lighting Capsule Element
  - Rated at 32 LPW (50w = 100w)**
- Removable, Interchangeable Safety Cover
  - Re-usable; reduces waste
  - Upgradeable
  - Multiple Cover Style Options
- Heat-Resistant Ceramic Lamp Socket Adapter
- Initial Availability - Medium Base

