

PHILIPS

sense **and** simplicity

Simply enhancing Life with Light

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CEO, Philips Color Kinetics

Super Bowl XLIII, Tampa, Florida



Key Takeaways

- LEDs are the new lighting source - **with a bright future**
- Intelligent control unlocks the LED luminaire's potential – **control is the key**
- LED luminaires are evolving from products to solutions – **solving complex customer problems**



LEDs are the new lighting source

Conventional Lighting Sources

- Incandescent
- Halogen
- Fluorescent
- Gas-discharge (example: neon)



LED Lighting Source

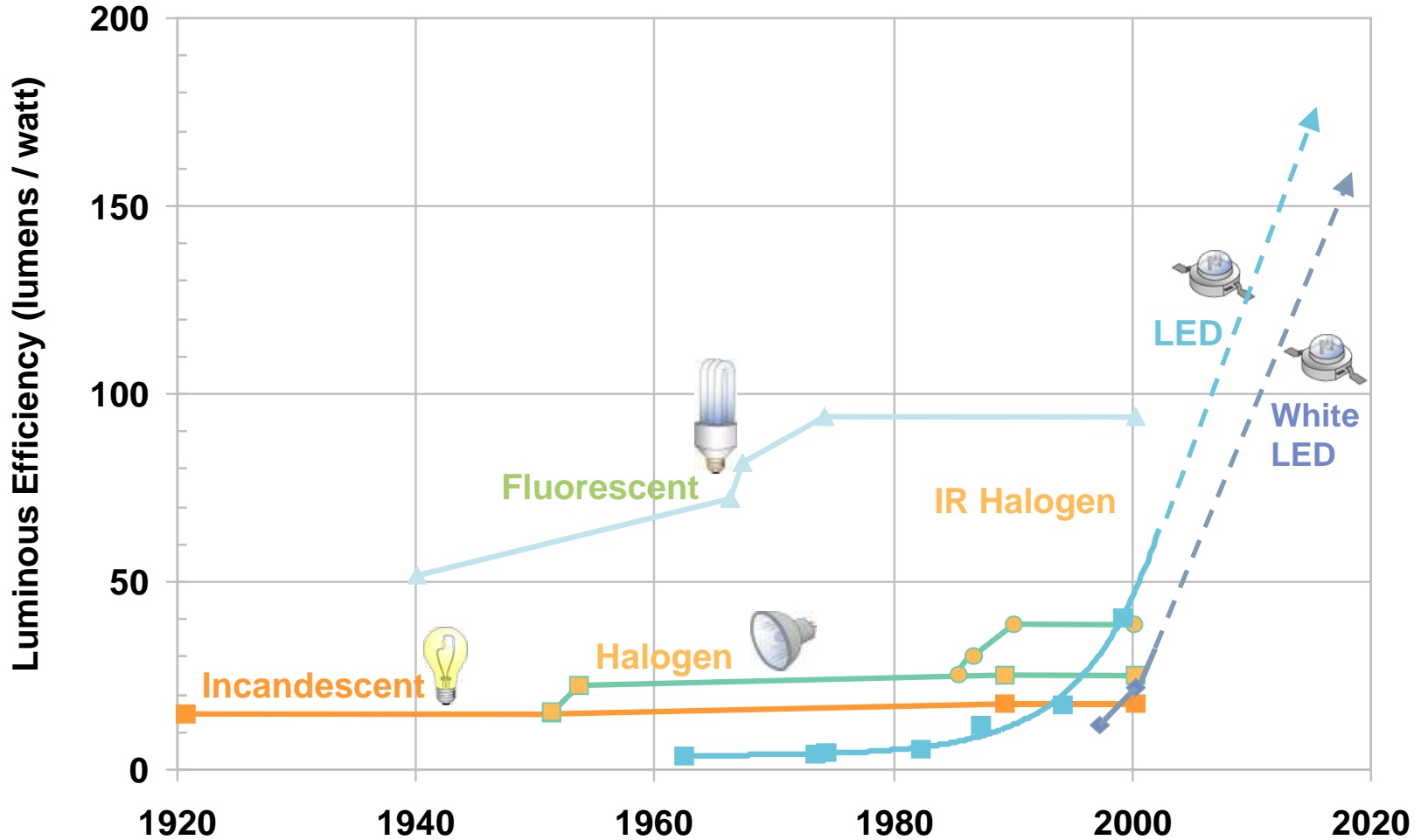
- Light emitting diodes (LEDs)



Benefits of LEDs

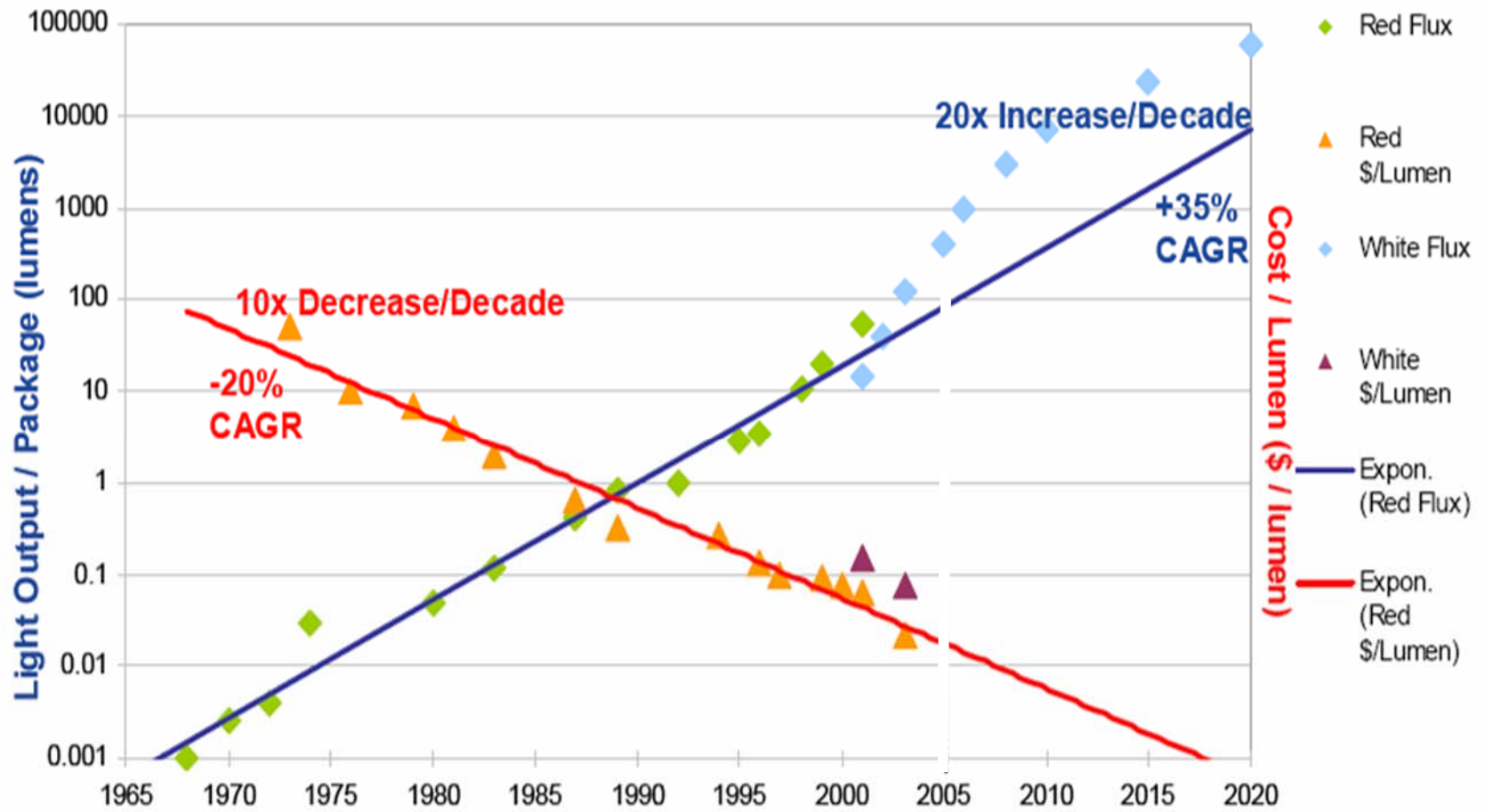
- Ultra long source life
- Low power consumption
- Low maintenance
- No moving parts
- No UV radiation
- Cool beam of light
- Digitally controllable
- Sustainability

Market Trends: LEDs Eclipsing Traditional Technologies



Source: Lumileds; Projections are Color Kinetics estimates

Haitz's Law: LED Light Output Increasing / Cost Decreasing

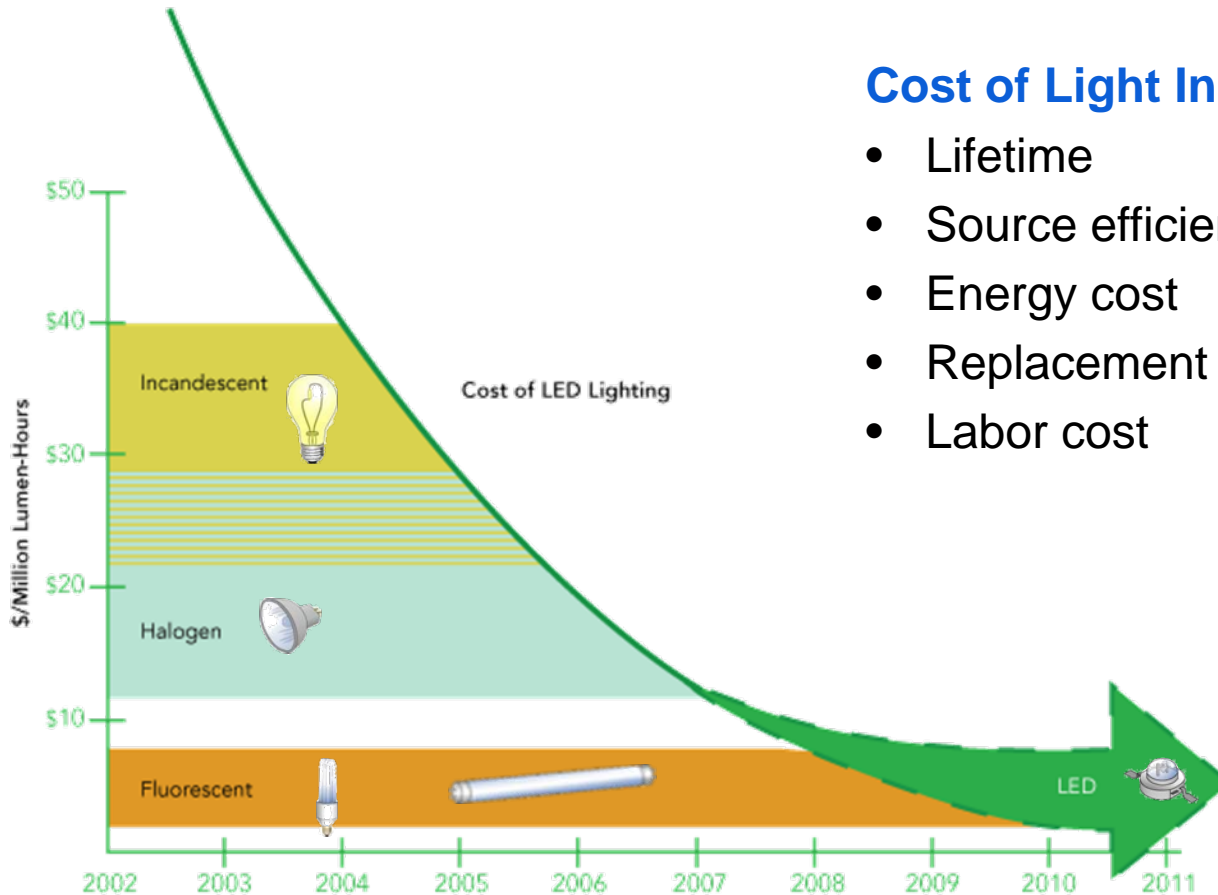


Source: Roland Haitz & Lumileds

LED Cost of Light is Gaining Traction

Cost of Light Incorporates:

- Lifetime
- Source efficiency
- Energy cost
- Replacement cost of lamp/fixture
- Labor cost



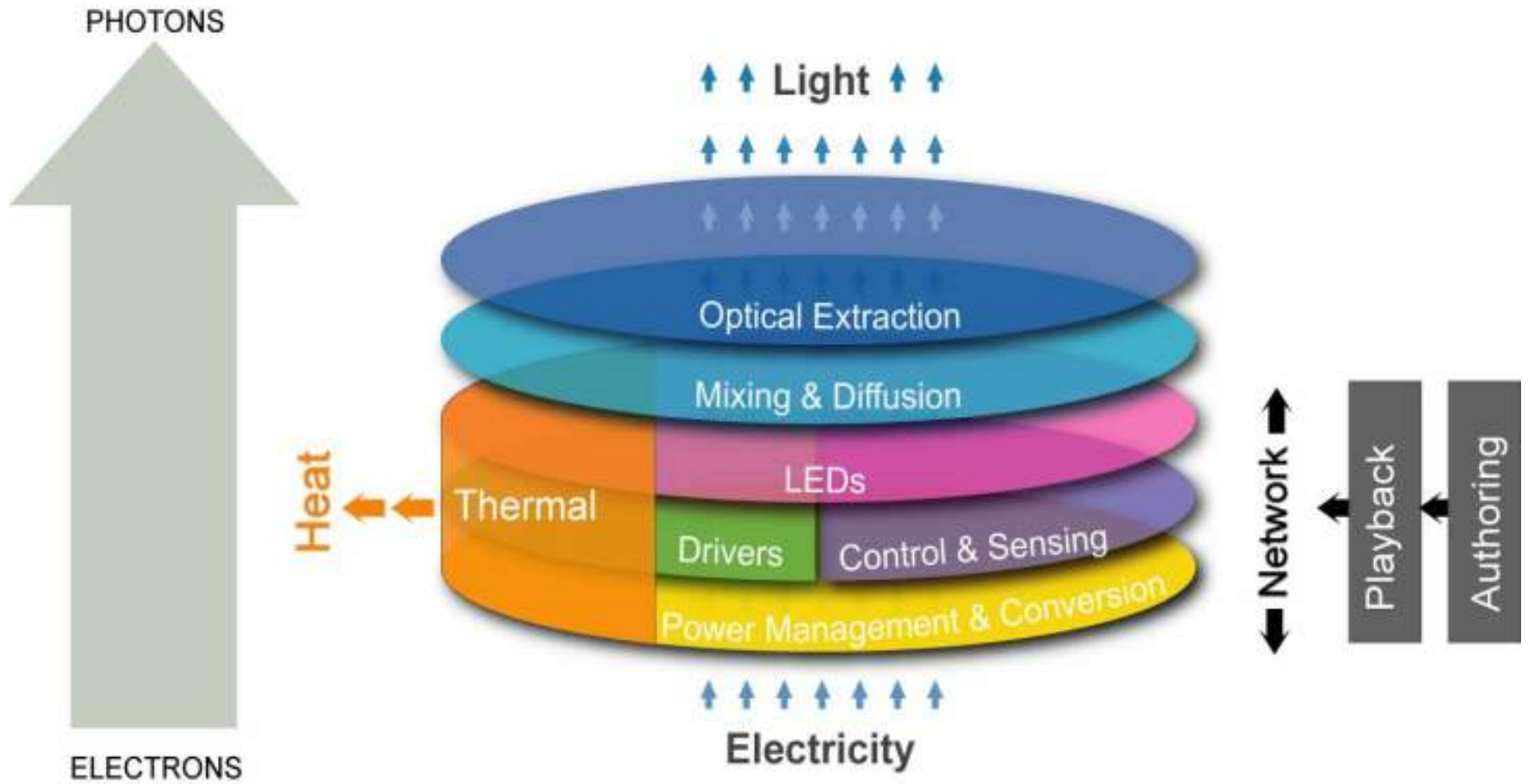
Source: Color Kinetics; Research conducted with white LEDs only; Color Kinetics estimates, and are not indicative of future performance

Standards & Regulations Are Driving Demand

- Energy Independence & Security Act of 2007 objective – by 2018
 - Reduce residential lighting energy by 50%
 - Reduce commercial by 25%
- Legislation: Ban the Bulb (EU & California early adopters)



LED Lighting Systems: Philips Advantage



LEDs, from decorative, **colored lighting** to



**Urban
Architectural**



Urretxo Town
Spain



Retail



Lacoste
Multiple US locations



Hospitality



Grand Melia
Tenerife, Spain



Healthcare



Swiss Medical
Buenos Aires,
Argentina



Entertainment



Star Trek the Tour
Long Beach, California

...towards functional, **efficient white** light



Street & Road



Tramkwartier
Eindhoven,
Netherlands



Petrol



Shell Oil
Multiple European
Locations



Accent lighting



Andrew's Ties
Lima, Peru



General lighting



Stockholm Airport
Sweden



Case Study: LED Systems for Illumination

Peace Bridge - connects Buffalo, NY, USA to Fort Erie, ON, Canada

Description

- Replaced metal halide lamps
- LED floodlights transform bridge

Financial Impact

- Cut energy consumption by **66%**
- LED floodlights are capable of producing millions of colors and dynamic sequences
- Dramatically reduced maintenance costs
- Improved lighting provides a well-lit secure area

Solution Used

- ColorBlast Powercore
- ColorReach Powercore





Case Study: LED Systems for Illumination

County Hall, London, England

Description

- LED floodlights reclaim the building's prominence along London's Southbank
- Provided a sense of cohesion with other attractions
- Lighting color scheme can change to meet customer needs

Financial Impact

- Cut energy consumption by **85%**
- Easy retrofit significantly reduces installation costs
- Dynamic effects via push of a button

Solution Used

- ColorReach Powercore
- iPlayer 3
- ColorPlay 3



Case Study: LED Systems for Illumination

Imagine Light Canvas at Walt Disney Pavilion, Florida Hospital for Children, Orlando, FL

Description

- Virtual light canvas enabled by LED system, and interactivity and games enabled by software and control

Value Proposition

- Provides a positive, fun and interactive area for both patients and visitors to gather, while in hospital waiting room, reducing stress and anxiety

Solution Used

- iColor Module FX





Case Study: Interior White LED Systems

Old North Church, Boston, MA

Description

- Upgraded national historic landmark, using LED lighting, to surpass the quality and quantity of light of the former incandescent lighting system

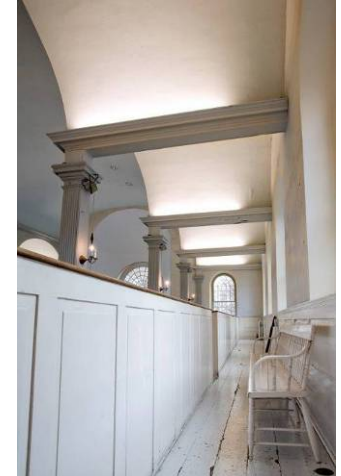


Financial Impact

- Cut energy consumption by **85%**
- Reduces maintenance
- Lack of UV and IR in light output helps to preserve the historical building

Solution Used

- eW Cove Powercore



LED breakthrough in Total Cost of Ownership

Installation	eW Cove Powercore ¹	T5 Fluorescent ²	Incandescent ³
Number of Fixtures	100	54	100
Fixture Cost	\$5,400	\$5,940	\$2,750
Number of Lamps	0	54	300
Lamp Cost	\$0	\$648	\$1,200
Number of Accessories	1	54	0
Accessory Cost	\$44	\$2,646	\$0
Control Cost	\$20	\$335	\$20
Installation (\$47 / hour) ⁴	\$282	\$761	\$1,175
TOTAL INSTALLATION COST	\$5,746	\$10,330	\$5,145
Maintenance			
Re-lamps per 50,000 hours	0	4	15
Lamp Cost per Change	\$0	\$2,700	\$6,000
Re-lamp Charge ⁵	\$0	\$317	\$2,115
Lamp Disposal Fee ⁶	\$0	\$169	\$0
TOTAL MAINTENANCE COST	\$0	\$3,186	\$8,115
Power			
Power Consumed per 100 ft	450 Watts	760 Watts	3000 Watts
TOTAL POWER COST⁷	\$2,475	\$4,180	\$16,500
TOTAL COST OF OWNERSHIP			
	\$8,221	\$17,696	\$29,760
Cost Savings Percentage		54%	72%

1 Philips 523-000004-00 fixture, 10-foot leader cable, and Leviton 6615 ELV control
 2 Lithonia MSS 1 14T5 fixture, T5HO lamp, dimming ballast, and Leviton MNX10-1L and PE200-70W control
 3 Low voltage strip light using (3) 10-watt frosted xenon festoon lamps at 50 lumens per lamp
 4 Estimated 4 minutes per foot for LED, 10 minutes per fixture for Fluorescent strips
 5 Two minutes per lamp, \$47 per hour labor rate
 6 \$0.75 per lamp, www.lamprecycling.com
 7 \$0.11/kWh, www.eia.doe.gov

Summary of LED key benefits



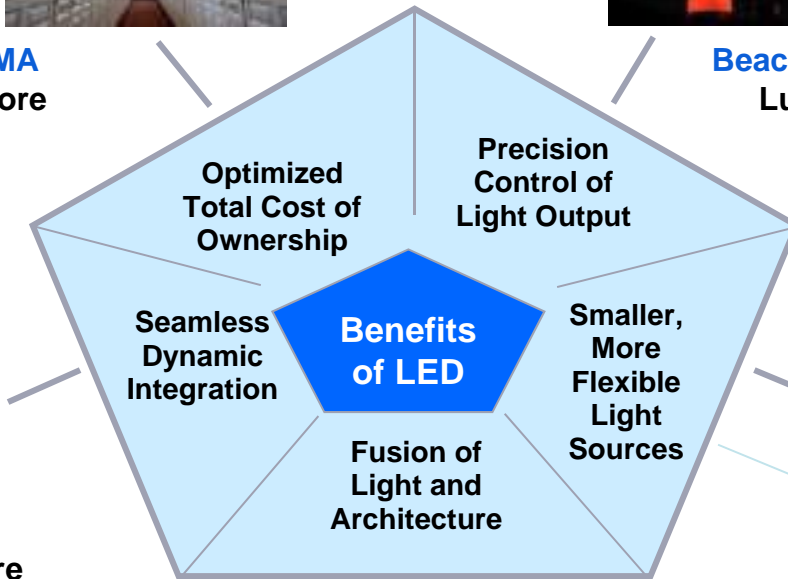
Old North Church, Boston, MA
Luminaire: eW Cove Powercore



Beacon Island, League City, TX
Luminaire: ColorBlast 12



Harrah's Casino, Atlantic City, NJ
Luminaire: iColor Accent Powercore



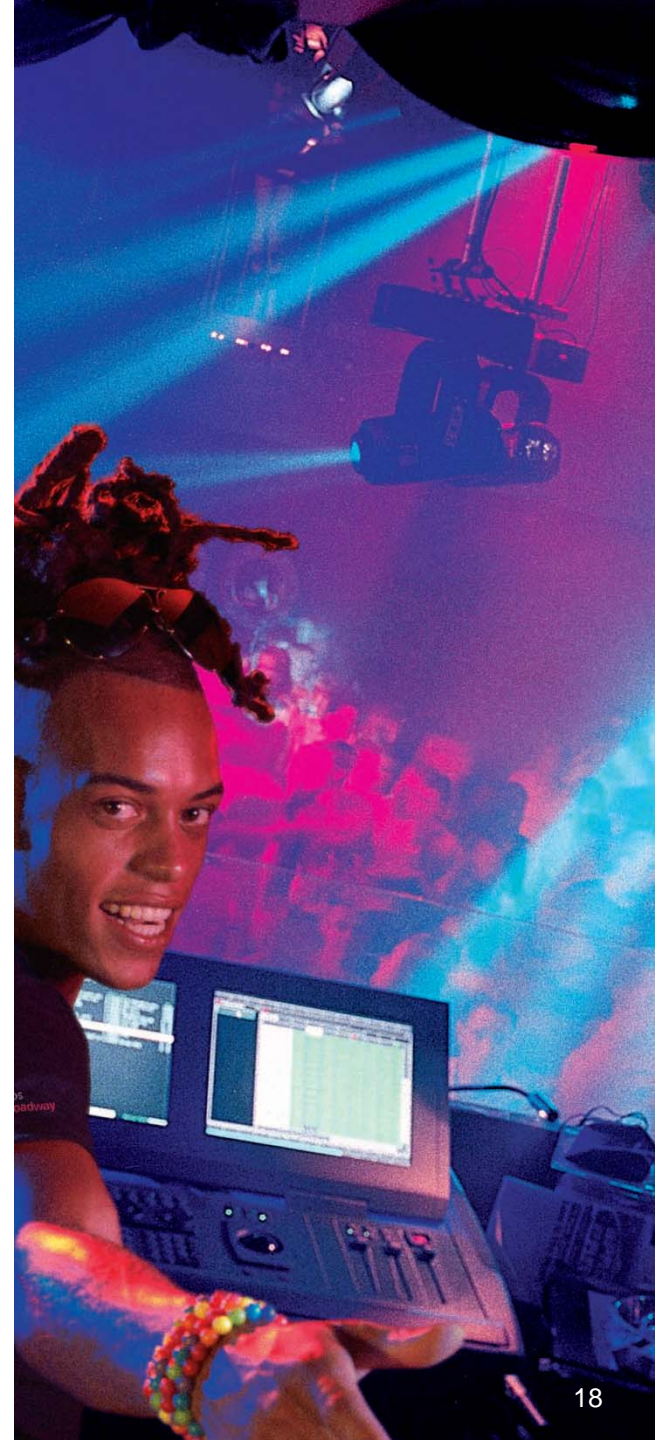
Fire, Vauxhall, UK
Luminaire: iColor Flex SL



The Pub, Stockholm, Sweden
Luminaire: iColor Cove MX Powercore

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Q&A

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