

ENERGY & TECHNICAL SERVICES CONFERENCE

SAVE ENERGY & REDUCE CARBON FOOTPRINT
OMNI ORLANDO RESORT AT CHAMPION'S GATE,
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The future of Supermarkets

...what are the opportunities for lighting?



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FMI September 10, 2008

Supermarket Trends

- Lighting Trends
 - Big Box to Segmented Marketplace
 - Branding of Store
 - Lighting to create different feeling in different areas
 - Color temperature warm/cold
 - Accent & diffuse lighting
 - Longer life & Energy efficiency
 - Reduced Maintenance Costs
 - Increased Energy Efficiency
 - New ASHRAE Energy standards



Shopping concepts - clustering the concepts

*People shop differently, at different times,
for different reasons*

Functional shopping

The 'necessity' of

Buying food

Inspirational Shopping

The 'experience' of

Lifestyle

Social shopping

The 'interaction' with

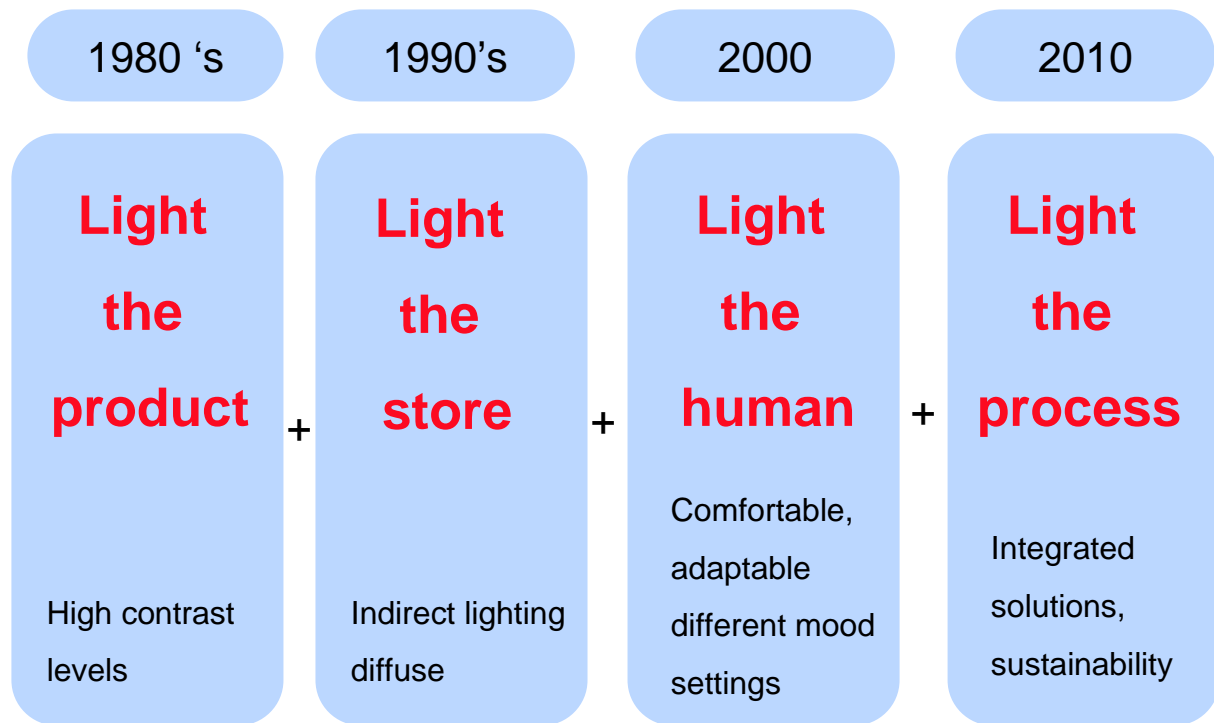
Community

Inspirational shopping



“Successful shops will have transformed themselves into specialist centers of ‘experiences’, both social and cultural, and will no longer be just sellers of goods and services”

Evolving trends in retail lighting design

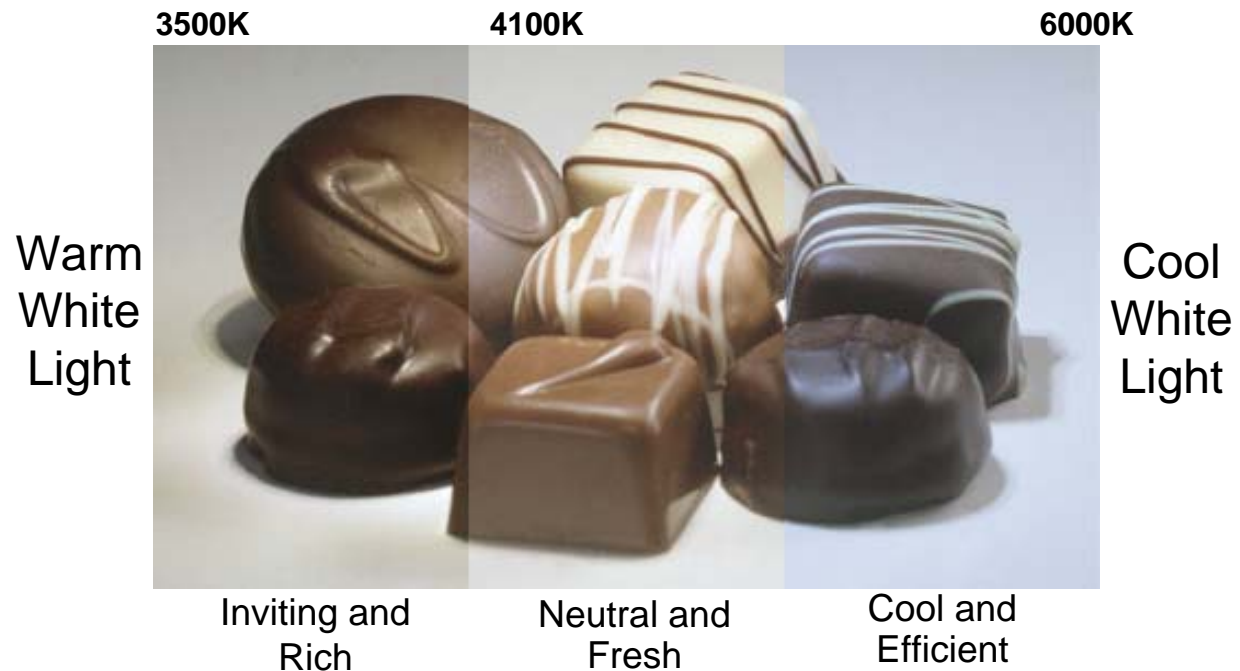


Perception of Light

- Contrast to outdoor environment
- Lighting Surfaces
- Key accent points
- Color Temperature
- Warm or Cool?



Impact of Lighting on Product Visualization



Vertical Illumination

Lighting People and Product not the floor



*“Products are problem solving
tools....*

*....People don't buy 3/4”
drill bits - they buy 3/4”
holes”*

Current Product Solutions

Available Today

- **Fluorescent Lamps**
 - Upgrading to high efficiency T8's
 - Fluorescent Fixture solutions to replace HID
- **Energy Saving HID solutions**
 - Comparable to High Bay fluorescent
- **LED Freezer Solutions**

Energy Codes and Legislation

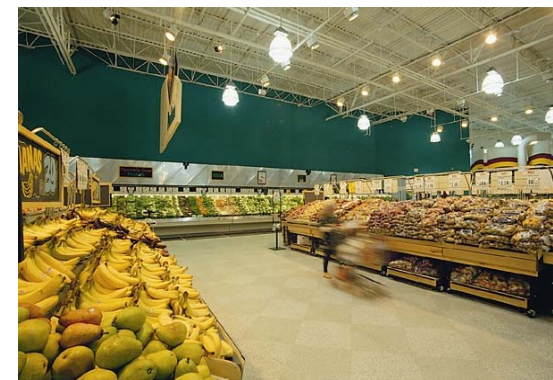
- **EPAAct 2005** (extended after 2008)
 - Tax incentives for upgrading lighting
- **ASHRAE**
 - 1.9 w/sf allowance
- **Title 24** (primarily California)
 - Bi-level control of lighting
- **Title 20** (aka: EISA 2007)
 - New HID fixtures
 - 88% efficiency for Pulse Start MH
 - 94% efficiency for Probe Start

Supermarket HID solutions



- Medium Wattage HID solutions available today that are as energy efficient as high bay fluorescent solutions.
- Now allows you to maintain the HID “look” in your stores without having to sacrifice energy savings.

Supermarket HID solutions,



- **High Efficiency**
 - Over 100 lm/w efficacy
- **90+ CRI**
 - Presents your products naturally
- **Low cost of ownership**
 - Long life, low energy solutions

\$ 116*/fixture in energy savings annually!

* 5,000 hrs x 233W saved x \$.10 Kwh

400W vs. 210 Watt HID Comparison

System	400W Probe Start	320W <u>PS CDM</u>	54W(x4) <u>T5HO</u>	210W <u>Elite</u>
Mean Lum	24,000	23,000	19,000	22,000
CRI	65	90	85	95
Input Power	458W	368W	234W-240W	225W
LPW	52	62	80	98

Effectively Outlawed for NEW Installations January 1, 2009

Over 50% savings going from 400W to 210W Ceramic

MasterColor Elite



- Available in 39W & 70W version

- T4 or T6 lamps provide versatility for existing applications
- Operates on same electronic ballasts as standard CDM

- Improved Design Lumens 85% Maintainence

Less fixtures needed...lower energy as much as 44% and initial fixture design costs!

- Enhanced Color Quality

90+ CRI with enhanced red color tones
Merchandise / produce looks better

Main Features & Benefits 20W capsule

Compared to Halogen

- 20W equals 50 or 65W halogen
- 2-3 times the lifetime of halogen

Compared to CDM T4 20/39W

- Half the size
 - Better control of light
- Precise positioning of burner for good optics design (important for color consistency)
 - Merchandise is presented in consistent fashion
- Sturdier design: new cap/lamp holder (easy maintenance)
 - Lamps stay in socket minimizing disruptions
- System development for ballasts
 - Smaller size for next generation fixtures
 - Lower ignition voltage for easier fixture design



CDM Technology...



Taken One Step Further

Introducing the CDMi Integrated Metal Halide PAR 38 Lamp



- **Philips 25 watt CDMi replaces 60 Watt Halogen**

12,000 Hrs vs. 3000 Hrs. **\$49.60 saved per lamp over life**

- **Philips 25 watt CDMi replaces 60 Watt HIR**

12,000 Hrs. vs. 4000 Hrs. **\$55.34 saved per lamp over life**

- **Philips 25 watt CDMi replaces 90 Watt Halogen**

12,000 Hrs. vs. 2500 Hrs **\$77.70 saved per lamp over life**

Energy Saving Fluorescent Solutions



- Maximize energy savings on existing 4' T8 systems on your next scheduled re-lamp!
- Several choices today
 - 30W Saves \$.80 annually
 - 28W Saves \$1.60 annually
 - 25W Saves \$2.80 annually
- Will typically operate on any instant start T8 ballast.

Energy Saving Fluorescent Solutions



Additional Benefits...

- > 80+ CRI
- Long life systems reduce maintenance costs
 - Up to 46K hours with programmed start ballasts
- Lower Mercury content
 - Helps meet sustainable initiatives

Typical savings per 3 lamp fixture = \$ 8.50 per year!!

...Looking into the crystal ball...

- **LED Technologies**

- PAR lamps (most likely PAR38 initially)
- 70+ lumens/watt efficacy
- 90+ CRI
- Controllable

For Category management

Improved product visibility and presentation



Freezer with fluorescent lighting



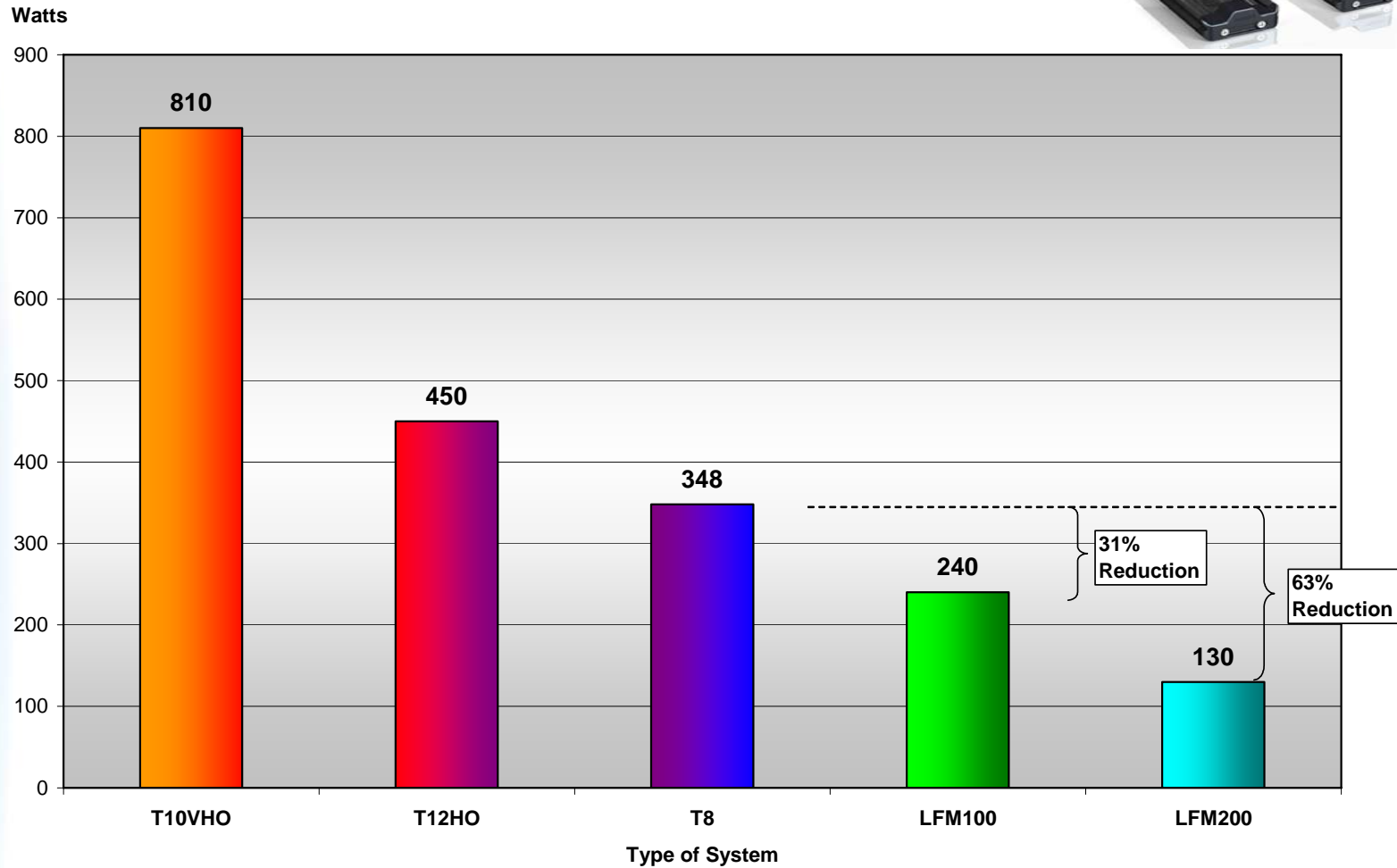
Freezer with LED freezer modules

LED Freezer Modules – *creating value for:*

- *Facility management: an attractive Total Cost of Ownership*
 - Significant reduction in energy consumption
 - Significant reduction of maintenance costs (lamp replacement)
 - For retrofitting existing installations as well as new built freezers
- *Category management Frozen Food: better product visibility*
 - Dramatic improvement of product presentation
 - Uniformity
 - Light level
- *Sustainability: a significantly better environmental alternative*
 - Reduced CO₂ emissions
 - Eliminates hazardous substances such as mercury and lead



5-Door Case Power Consumption



\$ 109*/unit in energy savings annually!

* 5,000 hrs x 218W saved x \$.10 Kwh

PHILIPS



Questions?