Greener TV Studio Lighting:
Side by Side Comparison of Lighting Studios with both Low Energy Lighting Options And Conventional Lighting

Panelists:

- Bruce Ferri
  Ferri Lighting Design & Associates
- Mark London
  Lighting Design Group

MODERATOR:

- Bryan Raven
  White Light, Ltd.
HD Quality Energy Efficient, Low Heat Broadcast Lighting

Presented By: Mark London
The Lighting Design Group
www.LDG.com
LED BROADCAST LIGHTING FIXTURES

CASE STUDY - BLOOMBERG, L.P. NY STUDIOS
WATTS PER SQ. FT. COMPARISON

- Hybrid Technology - 46 Watts/Sq. Ft
- Energy Efficient - 10.86 Watts/Sq. Ft

Figures based on existing Bloomberg NY Studios (opened in 2005) and new 20,000 sq. ft Bloomberg Open Newsroom Studio launched in 2009.
**Bloomberg L.P. New York 5th Floor Newsroom Studio**

### Power and Price Comparison: Energy Efficient vs. Incandescent Fixtures

#### Energy Efficient Fixture List

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Type</th>
<th>Power (watts)</th>
<th>Total Power (watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Source 4 Leko (19)</td>
<td>375</td>
<td>375</td>
</tr>
<tr>
<td>2</td>
<td>Source 4 Leko (26)</td>
<td>375</td>
<td>4,125</td>
</tr>
<tr>
<td>6</td>
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</tr>
<tr>
<td>11</td>
<td>Source 4 Leko (50)</td>
<td>375</td>
<td>4,125</td>
</tr>
<tr>
<td>1</td>
<td>300W Fresnel</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>145</td>
<td>CK White Blast</td>
<td>50</td>
<td>7,250</td>
</tr>
<tr>
<td>2</td>
<td>Kino Flo Diva 400</td>
<td>220</td>
<td>440</td>
</tr>
<tr>
<td>5</td>
<td>Kino Flo Parabeam 200</td>
<td>210</td>
<td>2,100</td>
</tr>
</tbody>
</table>

**Total Wattage:** 23,155

**Wattage/Sq Ft in Studio:** 10.86

**Wattage/Sq Ft in Newsroom:** 0.84

**Total List Price for Energy Efficient Fixtures:** $187,150.00

*Pricing includes a Strand BakPak dimmer for all Lekos and City Theatrical PDS ‐ 750s as required for all CK White Blasts.

#### Incandescent Fixture List

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<tr>
<td>145</td>
<td>650W Fresnel</td>
<td>650</td>
<td>4,250</td>
</tr>
<tr>
<td>2</td>
<td>Kino Softlight</td>
<td>2,000</td>
<td>4,000</td>
</tr>
<tr>
<td>5</td>
<td>Kino Softlight</td>
<td>2,000</td>
<td>39,000</td>
</tr>
</tbody>
</table>

**Total Wattage:** 148,425

**Wattage/Sq Ft in Studio:** 60.83

**Wattage/Sq Ft in Newsroom:** 5.69

**Total List Price for Incandescent Fixtures:** $114,545.00

**Estimated Price for Dimmer Racks and Raceways:** $75,000.00

**Total List Price for Incandescent Package with Dimming:** $189,545.00

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**Operational Energy Cost Savings in Bloomberg Newsroom:**

- **Percentage Wattage Savings - Energy Efficient vs Incandescent Fixtures:** 84.4%
- **Daily Savings in Kilowatt Hours (kWh) - Energy Efficient vs Incandescent Fixtures Based on a 12 hour day and 60% Diversity**: 902
- **Daily Savings in $ Based on Savings in kWh using commercial rates obtained from Con Edison ($0.065/kWh(Supply) & $0.065/kWh(Delivery))**: $117.25
- **Daily Savings in $ Based on Savings in AC using commercial rates obtained from Con Edison ($0.065/kWh(Supply) & $0.065/kWh(Delivery))**: $50.01
- **Daily Savings in Power and Cooling**: $167.26
ON THE HORIZON:

LED Fresnel  
Plasma Fixture

LED Ellipsoidal Reflector Spotlight  
LED Wash Light

The Jerome L. Greene Performance Space  
WNYC Radio – New York, NY
Reuters – New York, NY
Energy Efficiency In Lighting Design For Television

A Look at Two Projects

- ESPN NASCAR Pit Studio
- Comcast Sports Net Bay Area
ESPNNASCAR Pit Studio

Design Criteria

- Ability to Change Color Temperature by “Magic”.
- Low Power Consumption.
- Must be Low Maintenance.
- Talent Comfort/No Heat
### CFL vs. LED

<table>
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<tr>
<th>CFL</th>
<th>LED</th>
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<tbody>
<tr>
<td>• Larger size</td>
<td>• Smaller in Size</td>
</tr>
<tr>
<td>• Could not change Color Temp.</td>
<td>• Could change Color Temp.</td>
</tr>
<tr>
<td>• Higher Power consumption</td>
<td>• Lower Power Consumption</td>
</tr>
<tr>
<td>• High Maintenance</td>
<td>• Lower Maintenance</td>
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<tr>
<td>• Low Heat</td>
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### CFL vs. LED

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<td>• Low Heat</td>
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Selador
Primary Fixture Choice

- Greater flexibility in Color Temperature Adjustment.
- No Magenta or Green Spikes.
- 20° and 30° Lenses used to control spill on other talent.

James Thomas
Pixelbrick
Secondary Fixture Choice

- Used as back lights.
- Smaller form factor.
- Closer to talent.
- RGBA provides a better color mix.
25-30 Amps (Actual Load)

Comcast SportsNet
Bay Area
Comcast SportsNet Bay Area
Design Criteria

- Compliance to Bay Area’s strict Seismic Codes restricting available power
- Both Studios must be able to be run off of back up generator if there was a power outage.
- Client wanted to use latest technology to minimize environmental footprint.
- Must look like all other Comcast SportsNet studios in all other regions.

The Comcast SportsNet “Look”

- Same Scenic Design in all regions.
- Talent lit with Lekos.
- UV Lights used on set for effect.
- Fluorescent Light Boxes used on set.
The Comcast SportsNet Sets:

- Regional Sports News
- Regional Sports Talk Show
- Regional “Post Game Live”

Typical “Sports Nite”
Typical “Post Game Live”

To maintain a consistent look with the other Comcast SportsNets meant an all LED approach could not be used.
Tools used for Bay Area Studio A

- Conventional Lekos lamped down to 375
- Dimmed with SCRimmer Sticks
- 70w HID Lekos used for lighting scenery.
- Color Kinetics iW Blasts used for Wash and Back Lights.
- Color Kinetics iCoves with Bak Pak dimmers used for light boxes.

Bay Area “SportsNet Central”
Bay Area “Post Game Live”

Video Still Comparison

Conventional

Energy Efficient
## Power Usage Comparison
with all sets “live”

<table>
<thead>
<tr>
<th></th>
<th>Mid-Atlantic (Conventional)</th>
<th>Bay Area (High Efficiency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>630 Amps (Actual Load)</td>
<td>630 Amps (Actual Load)</td>
<td>188 Amps (Actual Load)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Mid-Atlantic (Conventional)</th>
<th>Bay Area (High Efficiency)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.20 Amps/Sq. Ft.</td>
<td>.20 Amps/Sq. Ft.</td>
<td>.07 Amps/Sq. Ft.</td>
</tr>
</tbody>
</table>

## Lighting Equipment Cost Comparison*

<table>
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<th>Mid-Atlantic (Conventional)</th>
<th>Bay Area (High Efficiency)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$177,000</td>
<td>$136,550</td>
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</tbody>
</table>

*Does Not Include Installation Labor
High energy efficiencies can be achieved today by combining several existing technologies, and exploiting their strengths.