

Litepanels® Technical Whitepaper

Chris Mellor DIT, DP, BSEE.

New Technology

Litepanels® are new semiconductor-based (LED) broadcast lighting systems. Not long after the advent of their Litepanels Miniplus comes the innovative Litepanels 1x1. The Litepanels® 1x1 draws less current than a conventional 60 watt bulb. It measured only 47 watts power consumption at full output. This is less than a quarter of its Fluorescent counterpart and a tenth of Tungsten. It has an integrated dimmer from 0 – 100% with a close-to-zero color shift when dimmed and flicker-free light output.

The Litepanels® has an optional battery pack gives you 1.75 hours of light and there are many other powering options from an AC adapter to different battery interconnections. The Litepanels® is also lightweight and low profile and provides a soft light source with a close to zero color-drift which can augment any traditional lighting.

Working in confined spaces is easy. Litepanels® are low-profile (1 ½”) and can be mounted in close proximity to talent without risk of burning. The integrated gel tray holds several of the supplied color balance gels. Litepanels® give you the freedom from power cables and are completely portable. Three focus options allow pinpoint lighting configurations and complete control, with new variable color and variable focus models recently released. Several Litepanels® can be assembled into an array, giving you a wall of light.

- Quick setup.
- Flicker free soft light.
- Zero heat on subject
- Eco-friendly, especially as compared to mercury-based florescent lighting
- Low power consumption. No fear of popping a breaker.
- Lightweight and completely portable.
- No cool down wait.
- Long life – 50,000 hours+. No bulb changes. I’ve never known an LED to fail.
- Comes in Flood, Spot 30°, and Super Spot 15 °. Variable color (Bi-Color) and Variable Focus (Bi-Focus) models recently added
- Augment traditional lighting.
- DMX control. (0 – 100%)

Power.

Litepanels® accept 12 – 30 volt DC. This is either via the universal power adapter (100-240 volts AC), the optional clip on battery pack, any suitable battery or lighter outlet. The current consumption is 45-55 watts at full power depending on source voltage. If you consider power usage over a production, battery savings can be substantial which in turn save you time and money.

Travel.

For video on the go professionals Litepanels® is a must.

- Litepanels® are safe, light and rugged.
- No bulbs to go bad or change due to voltage changes.
- No cool down time.
- Light in cars, planes, confined spaces, in the wild.
- Work internationally (100-240 volts AC).
- No Generators or Inverters required.

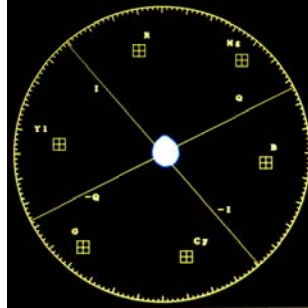
Color

Every Litepanels LED goes through a stringent test to make sure that it is exactly matched to the target color temperature.

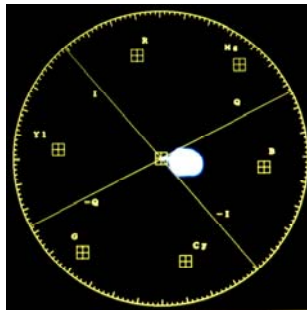
I tested the Litepanels® 1x1 against an HMI, a popular fluorescent, and a Tungsten light for color shift. I set up a HD video camera XDCAM HD framed on a white card and evenly lit. No Knee and standard gamma. The result was viewed on a Leader 5750 Waveform/Vectorscope at GAIN TIMES 5 to exaggerate the color shift. The undimmed HMI was used as reference.

The Litepanels® had a slight blue drift at full output and virtually zero shift at half power.

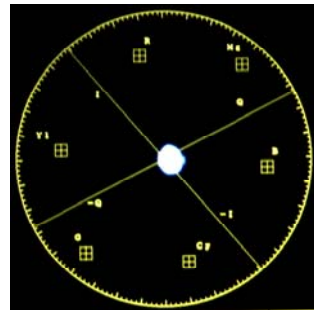
Heat: +20°F above ambient RT 22 BTU
Power Consumption: 47 watts.
Weight: 3 lbs
No Generators or Inverters needed.



HMI 5600 (Gain x 5) – Full Power
Unusable Blue range color shift when dimmed



Litepanels® Daylight
Full Output (Gain x 5)



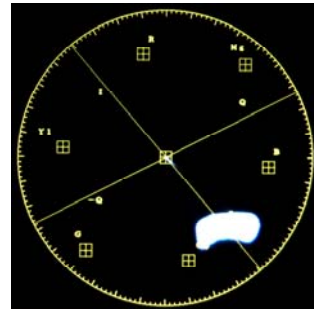
Litepanels® Daylight
Half Output (Gain x 5)

The Fluorescent had its telltale blue/cyan spread out shift which shifted cyan at half power.

Heat: +121°F above ambient RT 750.86 BTU
Power Consumption: 234 watts
Weight: 13 lbs.



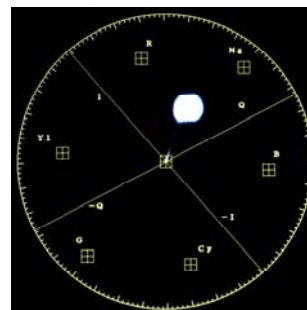
Fluorescent Daylight
Full Output (Gain x 5)



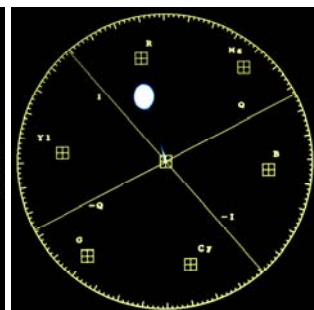
Fluorescent Daylight
Half Output (Gain x 5)

The Tungsten light had a red/magenta shift which moved to a more saturated red at half power.

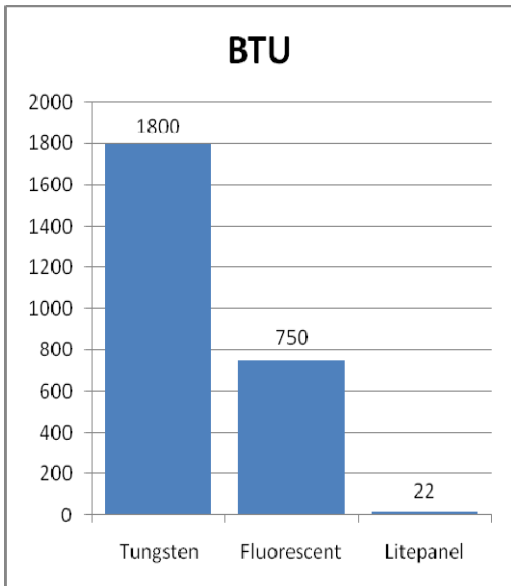
Heat: + 200°F above ambient RT 1800 BTU
Power Consumption: 550 watts
Weight: 4.5 Lbs



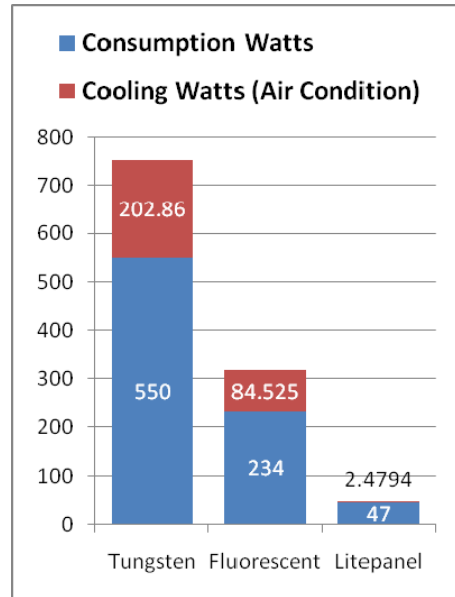
Tungsten/CTB
Full Output (Gain x 5)



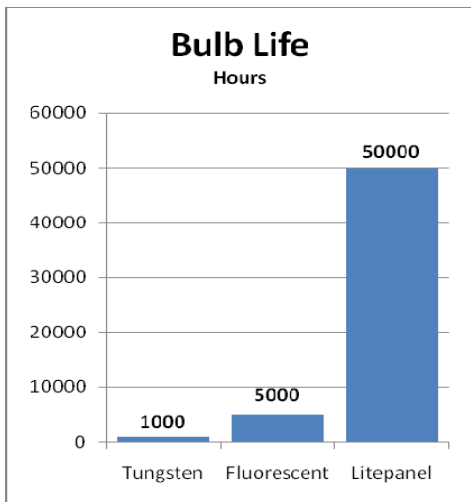
Tungsten/CTB
Half Output (Gain x 5)



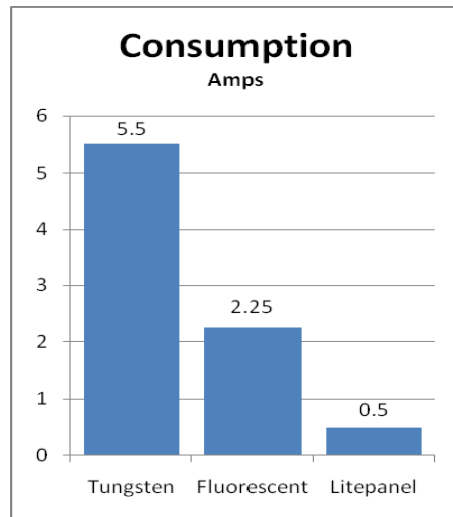
Heat Radiated (shown in BTUs)



Total Power Consumption



Bulb Life



Current Consumption

Summary:

Litepanels LED lighting systems are lightweight, cool running (one fortieth of its nearest rival), and have the lowest power consumption (one sixth of its nearest rival). Moreover, when one factors in the reduced air conditioning requirements for Litepanels' light emitting diodes, the operating costs of Litepanels are substantially lower than conventional incandescent or fluorescent lighting systems. The Litepanels fixtures themselves provide extremely long bulb life (over 50,000 hours) without the environmental hazards posed by mercury-based fluorescent lighting systems. From a power consumption standpoint, the adverse effects of many of today's power generation systems on the environment are well documented, and Litepanels' proprietary LED systems provide the industry with the best eco-friendly lighting option which minimizes damage to the environment.