Ideal-Lume® Panelight

The ideal viewing environment luminaire for wall-mounted flat-panel monitors.

Product Information Sheet

Model: #LL-7WLED-6500Kx2, 120 volt, 50/60 Hz (international users may require a step-down voltage converter)
Color: Black
Size: L23.5" x W1" x H1.5" each
Lamp: 52 custom LED arrays each, CCT 6500K, 93 CRI., 50,000 hour (approximate), 7 Watts each
Warranty: 5 years (limited) on fixtures and included electric dimmer (please contact our office for help)
Other features:

- Extruded aluminum fixture bodies
- One Plug-in, electric, LED compatible dimmer, for variable control of illumination (150 Watt capacity, 60Hz only)
- Custom LED chips, CCT 6500K (within +/- 0.005 x/y recommended CIE tolerances)
- Custom fixtures designed in the USA
- Side-mounted, on/off rocker switch each
- Linkable, with single 1 meter cable included (will interconnect with optional additional cables for longer runs), up to 200 Watts total (up to 28 total fixtures)
- Integral electronic, dimmable power supply, for instant start, quiet, low heat, energy-efficient operation
- White, wrap around diffuser lenses
- One two-meter power cord with grounded plug, grounded plug adapter included
- Mounting kit with 3M adhesive hook and loop sections, screws and drywall anchors, nylon zip ties, adhesive zip tie anchors, adhesive cord management clips, alcohol cleaning swabs, snap-on metal cabinet mounting clips
- ETL safety certified
- MSRP: $93.95

Award winning professional video viewing environment technology!
Rigid fixtures more portable, sturdy, and durable than LED strips!
Reduce eye strain in dark viewing conditions!
Promote accurate color perception!
Reveal nuances in hue and shading!
Eliminate glare and reflections!
Color correct for all color television standards!

In the mid 1980's the Society of Motion Picture and Television Engineers (SMPTE) conducted human factors research to identify optimum standards for the viewing conditions in professional monitor environments. Their work addressed issues applicable to all forms of electronic displays. These findings, as set forth in their 'Recommended Practices Document #166: *Critical Viewing Conditions For Evaluation Of Color Television Pictures*,' can be applied to the consumer's own viewing environment to get the highest level of performance and enjoyment from any television. A subsequent publication revising this document into a formal standard has made a few minor changes for modern high definition video monitors. See: SMPTE ST 2080-3:2017: *Reference Viewing Environment for Evaluation of HDTV Images*. SMPTE's work focused on helping the viewer see the picture correctly but also on making the viewing experience comfortable over a long period of time (minimizing eye strain as an example).

All TVs require a darkened room to present their best picture. The color, point of origin, and intensity of light in a viewing environment, all affect the quality of image obtainable from any television, as well as the degree of eye strain experienced by the viewer. A small light source, with a proper 'color temperature' lamp, placed behind a

direct-view monitor, or flat-panel display, fulfills much of what is needed to achieve the SMPTE recommendations pertaining to ambient light in the room.

Viewing a TV in a darkened room can cause eye strain in as little as 30 minutes. This is primarily due to stress upon the natural adaptive mechanisms in the optical system as scenes erratically change from dark to light on the screen. For a vivid demonstration of how frequently light levels change throughout a typical program, turn your back to a TV in a darkened room during a typical program, and notice how much the light changes in the room, both in intensity and frequency. Providing a small amount of light behind the TV 'biases' the optical system, and moderates human vision's adaptive mechanisms, resulting in more relaxed viewing. Screen glare and reflections are then dramatically reduced, by eliminating any light source from bouncing off the front of the set. Colors appear richer and blacks darker. Contrast and brightness controls can be turned down. Doing this will prevent over-saturation of the phosphors in plasma TVs, thereby reducing the risk of phosphor burn and premature phosphor aging. This method will also improve the perception of black level and contrast performance with plasma, LCD, and OLED displays.

The custom LEDs used in this product perform unusually well. The 'Color Rendering Index' (CRI) is 93 out of 100. CRI is the measurement of a light's ability to render pigments correctly according to a prescribed standard. Put another way, it's the ability of a light source to illuminate all colors in a predictable balance. The CRI of most types of lamps/bulbs is referenced to the spectral content of a standard element heated to a certain temperature on the Kelvin scale. Illuminants rated at 5000 Kelvins and higher are referenced to natural daylight at varying times of day. The correlated color temperature (CCT) of ***Ideal-Lume***'s lamp is 6500 Kelvins. This color of white light is the same as that displayed on a correctly calibrated TV set.

Two or more lights are typically needed for wall-mounted flat TVs due to the wall mount bracket blocking the spread of the illumination. A light of this type, placed behind the monitor, provides more than enough light in most rooms for critical viewing. Illuminate the wall behind the display to produce an even glow surrounding the screen.

The SMPTE ideal recommends that the wall behind the monitor be a matte, neutral color to further preserve correct color perception. Colors classified as neutral by the Munsell Color Order System, range from black to white through the gray scale. SMPTE suggests Munsell's 'nearly-neutrals' can be used elsewhere in the viewing environment but not within the field of view while observing the monitor. The lighter wall colors in most rooms invariably reflect so much light that most users of **Ideal-Lume** require some amount of light reduction.

SMPTE's research discovered that the optimum level of bias lighting for extended viewing should be 10% of the peak white output of the display device. Recent recommendations for mastering high dynamic range (HDR) programs specify a 5 nits (candelas per square meter) ambient surround illumination level. The **Ideal-Lume** output can be reduced incrementally by using the included electric dimmer.

In the absence of a light meter, there is a simple way to determine when the light is producing the correct 10% amount of illumination on the wall behind the set. Joe Kane Productions' *'Digital Video Essentials'* optical disc program series all contain a still-frame reference pattern labeled "Ambient Light Reference" that can be displayed on the screen to provide a visual comparison. Mr. Kane chaired the SMPTE Professional Monitor Working Group mentioned previously and produced this title to help consumers and technicians alike optimize their video display systems. Another program including a test pattern of this type is the *'Spears & Munsil HD Benchmark 2'* Blu-ray Disc. These titles are available from our online store. An equivalent test pattern available from professional test signal generators is a 30% digital luminance level window.

Available accessories:

One meter linking cables (can be interconnected for longer runs):	$4.95
Ideal-Lume Standard LED (extra fixture)	$43.95
Munsell 10-Step Neutral Value Scale (fan deck of reference color samples, from black to white):	$65.00
Automated on/off switching devices- see our online store	

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