



High Bright Options Overview

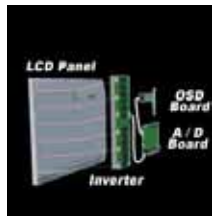
High Bright - Active and Passive Luminance Enhancements

To Actively and Passively enhance an LCD's Luminance is to apply optical principle that bring the native Luminance (that with witch a panel comes from the factory) to a higher value.



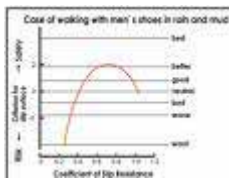
High Bright using CCFL (Active)

One Luminance enhancement is to add more CCFL's (Cold Cathode Fluorescent Lamps) to the LCD this is accomplished by removing the back light system of the LCD and adding or changing the CCFL's to increase the NIT value. In some cases this method can increase the Nit value by 3x, 5x, or 10x depending on the optical characteristics of the LCD. Typical High Bright LCD's have NIT values ranging from 600 - 2000 NITS.



High Bright Using LED (Active)

This method of High Bright Enhancement replaces the CCFL backlight system with either edge Placed LED (light Emitting Diodes) or an array of LED's covering the back surface of the LCD. This method is more expensive at present due to the current price of LED's and the number of LED's which are required. It is also one of the most efficient in view of power Consumption. Typical High Bright LCD's have NIT values ranging from 600 - 2000 NITS.



Passive Enhancements

Passive Enhancements utilize the technique of using Filters to add or change the NIT Value up from Factory Specifications. They can bring the NIT Value up by 200 to 500 nits. The benefit of Passive enhancement is that it requires no change to the backlight system or Inverters.

DIT has worked closely with our vendors to incorporate the Luminance Enhancements into many of our products. They can also be combined with optical bonding techniques to further enhance your LCD needs

Definitions

According to Wikipedia : Luminance is a photometric measure of the density of luminous intensity in a given direction. It describes the amount of light that passes through or is emitted from a particular area, and falls within a given solid angle.

The SI unit for luminance is candela per square meter (cd/m²). The CGS unit of luminance is the stilb, which is equal to one candela per square centimeter or 10 kcd/m².

Luminance is often used to characterize emission or reflection from flat, diffuse surfaces. The luminance indicates how much luminous power will be perceived by an eye looking at the surface from a particular angle of view. Luminance is thus an indicator of how bright the surface will appear. In this case, the solid angle of interest is the solid angle subtended by the eye's pupil. Luminance is used in the video industry to characterize the brightness of displays. In this industry, one candela per square meter is commonly called a "nit". A typical computer display emits between 50 and 300 nits.



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