

100,000 Hours Explained

Most buyers of digital signage will be familiar with the claim that an LED display has a life span of 100,000 hours. If you have done the maths you will have worked out that this means a sign that runs 24 hours a day / 7 days a week will have a lifespan of 4,166 days or 11.4 years.

But what does this claim really mean? Importantly, this is not an estimate of when an LED display will stop working altogether rather, it is the time it takes for an LED chip to reduce in brightness by 50% when operated at a temperature of 25°C or less. In other words, this is the theoretical life span under ideal operating conditions.

While there is no doubt that LED signs do have long life spans, for a chip to last 100,000 hours everything from the quality

of the componentry, the drive current, assembly, ambient temperature and junction temperature needs to be faultless.

In reality the greatest impact on the life span of an LED display is its operating environment. For example, it is highly unlikely that an outdoor sign without air-conditioning will be able to consistently run at 25°C. This means that a lifetime of 100,000 hours at ideal brightness will be difficult to achieve.

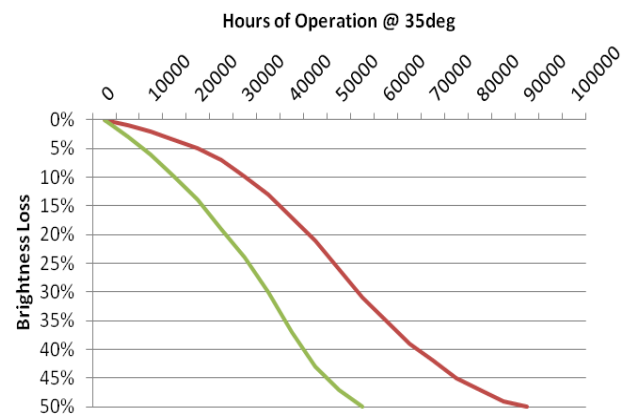
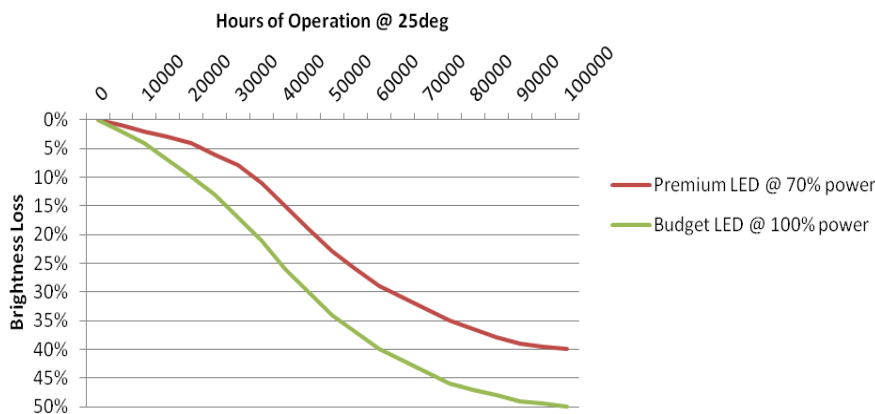
Brightness is lost over time due to the degradation of individual diodes. Depending on conditions, design and chip quality an LED display can lose 10% of its brightness after only 13,000 hours if temperatures are not properly controlled. Under the same conditions a premium LED

can take 4,000-5,000 hours longer to lose the same amount of brightness. But the combination of a premium LED and intelligent design can result in 30,000 hours operation before brightness is reduced by 10%.

It should be noted that an LED sign is generally considered not to be an effective outdoor display once its brightness has reduced to 60%.

As can be seen from the charts below only a premium LED chip operating under ideal conditions will run for 100,000 hours as an effective LED display. This compares to 65,000 hours at 35°C.

Regular servicing, appropriate cooling and a fit for purpose LED chip choice will all help to prolong the life of an LED display.



LED Technology Cheers up Sick Children

LED display technology is well known for its ability to be a powerful communication medium, but how often is it used to comfort young patients on their way to surgery?

Well at London's Great Ormond Street Hospital for Children that is exactly what has happened. A new interactive LED artwork by the Jason Burges Studio titled Nature Walk is designed to distract and calm patients en-route to the operating theatres.

The digital artwork integrates 70 LED panels and custom designed wallpaper. Each LED panel is embedded into the wall at different heights to suit the varied eye levels of patients. As the children travel down the corridor illuminated silhouettes of animals such as rabbits, hedgehogs & horses come to life triggered by sensors located in the ceiling and connected to the LED panels.



DID YOU KNOW?

The viewing distance is the ideal distance to view a sign from. This will depend on the application, but as a rough guide, halving the text height equates to the viewing distance in metres. For example 140mm text height is suitable for viewing up to 70m. Generally, indoor signs have a greater distance.