

## COMPANY PROFILE OF THE LT LIGHTING (TAIWAN) CORP.

LT Lighting (Taiwan) Corp. was established in 2000; originally dedicated to develop and produce high speed (dual layer) DVD disks using the inorganic materials of the company invention. With the invented novel heat dissipation materials as one of the important core technology, the company then ventured into very high power (more than 200W) LED lighting products since 2009. The company further invented and patented many important core technologies, including methods to produce extremely long stamina solar LED lamps that can sustain more than 9 nights of lighting with continuous rainy days. These products use the same conventional solar panel and battery storage (which were used in the commercial products; and they were often end up with providing one night lighting with one day sunny and left dark in the rainy day).

The history of the company LED products can be described as following:

LT Lighting (Taiwan) Corp. successfully developed **the generic light engines** before 2009. They are the building block of all LED lamps produced by the company. Up to today, there are more than 15,000 light engines in the market; therefore, they can be regard as market proven, generic products. These light engines are not only proven to have excellent light weight heat dissipation capability; but also to have wonderful water & dust protection (meeting IP 67 and beyond). Due to good heat dissipation and water & dust protection, these light engines also proven to have very little light degradation up to today (more than three years' operation).

In 2009, the company successfully developed and mass produced 500Watts flood lamps. They can one-to-one replace the 1500Watts metal-halide lamps in mobile lighting towers using diesel engine electric generators as power sources. Today, this 500Watts flood lamp is the only LED lamp that can one-to-one replace 1500Watts metal-halide lamps. Their applications include the mobile lighting towers, the high-pole (45m) lightings in container yards, lighting in terminal harbors, and the forward-lightings for the marine vessels.

In 2010, the company developed 200Watts LED high bay lamps. They are with very high illumination ( $> 350\text{lux}$ ) with very high uniformity ( $> 0.85$ ). Their applications include the lighting for coating inspection in auto factory; replacing 500Watts HML. These ultra-long life high bay lamps are also used as important lightings in many industries including noodle factories, paper mills, micro-electronics shops, and in textile industries.

To resolve the issue on “streets array with stand-alone conventional solar street lamps often left dark”; the company invented and patented methods to produce extremely long stamina solar LED lamps in 2011. These solar LED street lamps can sustain more than 9 nights of lighting with continuous rainy; using the same conventional solar panel and battery storage. This patent was published by the USPTO on August 9<sup>th</sup>, 2012. The company is now ready to launch these solar powered LED lamps based on this invention. These solar lamps have the following features:

- (A) These solar-powered lamp systems utilize electricity only in DC form without the need of using the inverter, the converter, the PWM, and/or the voltage regulator; (thus become much more efficient).
- (B) They can be operated in the full range of voltage in the battery energy storage without PWM or any voltage regulator; (this is extremely difficult for the LED lamps).
- (C) The power consumption of the lamp is varied in accordance with the level of remaining stored energy in the battery;
- (D) They not only can reduce power consumption when battery energy is draining down, but also improve their efficacy during battery energy draining down. In other words, these lamps can keep the lighting level above the requirement when the power consumption is much reduced when the energy of battery is draining.

As a result, these solar LED lamps can sustain more than 9 nights of lighting with continuous rainy days; using the same conventional solar panel and battery storage as the commercial ones (which often resulted in providing one night lighting with one day sunny in conventional operation). In short, these solar-powered lighting systems have extremely long stamina in lighting.

In summary of the company profile, the LT Lighting (Taiwan) Corp. is producing high quality high bay lamps, flood lamps, and street lamps for the markets in Australia, Europe, and Asia by integrating into these LED products (a) with its unique invention in heat dissipation materials, opto-electronics and mechanical technologies; (b) with its rear ability of light-pattern designs and circuit designs; and (c) with its spectacular ability in mechanical structure designs.