

# Hardcore Teardown: How Guangdong Landmark Technology Co., Ltd. Breaks Through Street Light Performance Limits

*CFD Simulation, Anti-Corrosion Die-Casting & Smart Constant-Current Driver Technologies Behind Next-Generation Street Lighting Solutions*

CALIFORNIA, CA, UNITED STATES, July 31, 2026 /EINPresswire.com/ -- When sourcing high-performance street lighting poles, procurement engineers often face a critical dilemma: balancing structural strength, corrosion resistance, and optical efficiency while keeping costs under control.

Guangdong [Landmark](#) Technology Co., Ltd. (LANDMARK), a global integrated manufacturer of aluminium light poles, solar light poles, and smart light poles, has cracked this code by deeply integrating three core underlying technologies. This article takes you inside Landmark's proprietary

engineering methods—CFD optical simulation, anti-corrosion aluminum alloy integrated die-casting, and intelligent constant-current dimming driver—to show how they systematically push the performance ceiling of street light poles beyond traditional benchmarks.



Guangdong Landmark Technology Co., Ltd.

## 1. High-Efficiency Optical Distribution & CFD Simulation

Landmark's R&D team, led by PhD and Master engineers, employs Computational Fluid Dynamics (CFD) simulation to optimize the optical distribution of LED street light fixtures mounted on their street light poles. The simulation models real-time airflow and thermal dynamics around the luminaire, ensuring:

- Rectangular light distribution that matches road geometry, reducing light pollution and

improving uniformity >0.35.

- Aerodynamic drag reduction by up to 12%, which directly lowers wind load on the pole—critical for high mast and tall flagpole installations in coastal or hurricane-prone regions.
- Thermal path optimization to keep LED junction temperature below 75°C, extending lifespan beyond 100,000 hours.

Actual field tests show that Landmark's CFD-optimized optical design achieves 140 lm/W luminous efficacy with a beam angle of 150°×75°, meeting EN13201 road lighting standards.

## 2. Anti-Corrosion Aluminum Alloy Integrated Die-Casting

To manufacture lightweight yet high-strength aluminium light poles, Landmark adopts a proprietary integrated die-casting process using Aluminum Alloy 6063 (material composition certified, see attachment). The key advantages:

- One-piece structural body eliminates welding seams, avoiding weak points common in traditional steel poles. This process is used for both direct burial aluminium light poles and decorative light poles.
- Salt spray resistance exceeding 1,000 hours (test report GZIN2509003739PL01\_EN, verified by SGS). The surface undergoes anodizing + PVDF coating, achieving C5-M corrosion protection class—ideal for marine, chemical, and mining environments.
- Weight reduction of 40-50% compared to galvanized steel, reducing foundation costs and simplifying installation. A typical 8m street light pole weighs only 35 kg.

Landmark's integrated die-casting also enables complex custom shapes for smart light poles that house 5G antennas, sensors, and cameras without compromising structural integrity.

## 3. Intelligent Constant-Current & Dimming Driver

The third breakthrough lies in the electronic control system. Landmark engineers designed a smart constant-current driver with adaptive dimming that works seamlessly with solar light poles and grid-powered street light poles:

- Constant-current accuracy  $\pm 2\%$ , ensuring stable light output even when input voltage fluctuates  $\pm 20\%$ .
- 4G/LoRaWAN remote dimming with 0-10V or DALI interface, enabling time-based or motion-sensor-based energy savings of up to 60%.

- Built-in surge protection (10kV/20kA) and thermal shutdown, complying with IEC/EN 61347-2-13.

#### Key Performance Parameters (Typical Model LM-AL-08)

- Power: 60-200W (adjustable)
- Protection Rating: IP66 (luminaires), IP55 (driver compartment)
- Color Temperature: 3000K / 4000K / 5700K (selectable)
- Wind Resistance: 55 m/s (EN40-6, Class 6) for 8m pole; optional 70 m/s for high mast systems
- Waterproof Standard: IEC 60529 IP68 (underground cable connection)
- Pole Material: Aluminium 6063-T6 (yield strength  $\geq 180$  MPa)
- Corrosion Protection: Anodizing + PVDF coating, salt spray >1000h
- Luminous Efficacy: 140 lm/W (CFD-optimized)
- Lifetime: >100,000 hours (L70, TM-21)

All products from Landmark carry rigorous international certifications: ISO 9001, ISO 14001, SGS product certificates, CWB welding certificates, and material composition reports. They have also passed government approvals in Dubai, Abu Dhabi, Qatar, Saudi Arabia, the USA, and Australia. The company's closed-loop system covers R&D, design, production, logistics, installation, and after-sales service—ensuring end-to-end support for engineering contractors and lighting companies worldwide.

For customized steel light poles, flagpoles, smart light poles, or decorative light poles, Landmark's dedicated team can simulate structural performance according to EN40-5/6/7, AASHTO or ANSI AISC standards before manufacturing.

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