



Introduction of SANSI and Its LED Lighting

June 25th, 2009



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Shanghai SANSI





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General Information

- Founded in: Feb, 1993
- Registered Capital: RMB50M
- Business Range: LED Products
(LED Lighting and LED display)
- Sales in 2008: RMB550M (USD80M)
- R&D and Production Area: 77000m²
- Staffs: 900



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General Information

SANSI Famous brand name in China

SANSI The largest LED manufacturer and supplier in China with over 16 years experience

SANSI Be awarded as “Contract Trustworthy Company” for 11 years in a row

SANSI ISO 9001:2000 certified, ISO 14000 pending

SANSI Strong production capability and R&D capability

SANSI A Technical Driven company

SANSI Products export to USA, Europe, South America, Asia and Mid-East, etc.



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LED lighting advantages

SANSI High LED lighting fixtures and systems efficiency

SANSI Unique heat dissipating technology

SANSI Top Nichia, Cree Ultra white LEDs to ensure reliability , Super high brightness and uniform luminosity

SANSI Reliable and high power-efficient power supply

SANSI Customized luminosity distribution chart



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Sansi Brief

- **Awarded Enterprise for Implementing National “863” Research Project on Semiconductor Lighting unit commitment**
- **Winner of National Semiconductor Lighting Product Innovation Contest "Product Innovation Award" 2008**
- **Associate Member of "LED Lighting on Road" Standard Drafting and Setting organized by National Transportation Ministry**
- **Approved Enterprise for Energy-Saving , Emission Reduction Demonstration projects by National Ministry of Transportation**
- **Associate Member of LED Display Division under China Photonics Industry Association**
- **Associate Member of Instrument Division under China Photonics Industry Association**
- **Associate Member of China Transportation and Engineering**
- **Associate Member of National Semiconductor Alliance**



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Sansi Brief

- **Winner of Shanghai Famous Brand Products in Years of 2005 and 2007**
- **Awarded as Shanghai High-Tech Little Giant Enterprise in 2007**
- **Recommended Brand for Energy Saving, Emission Reduction Products in Shanghai**
- **Approved Shanghai High-Tech Enterprise for 13 Years in a row**
- **Awarded Shanghai Innovation Enterprise for Brand name Equipment Manufacturing of High-Tech Industry**
- **The only Award-winning LED Lighting Product on The Third Shanghai Expo on Energy-Saving, Emission Reduction**
- **Awarded as Shanghai Enterprise of Commercialization of Hi-Tech scientific research results project**
- **Associate Member of Shanghai Photonic Industry Association**



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Current Application Problems

From the real market's point of view, there were few successful application of LED Tunnel lighting for a long period of time. Followings are common problems occurred in these applications:

- 1. Bad heat dissipating technology, poor quality LED chip resulting in high degradation rate.**
- 2. Low quality Power Supply with low power efficiency.**
- 3. Misunderstand the lighting application requirement, low illumination, unevenness of light distribution and poor contrast to background.**
- 4. Apply the wrong concept of "LED lighting efficiency" instead of the whole "LED lighting fixtures and systems efficiency".**
- 5. Over Exaggerating Energy Saving data to try to gain market share**



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Recommended Actions

- 1. Establishment of Scientific and Rational Technical Specifications and Standard.**
- 2. Standardization Lab Testing under the Guidance of Industry Ministry of the Government.**
- 3. Successful and effective Enforcement of Projects using Market Feed back Method.**



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LED lighting for Industrial Application

- 1. Industrial Application must implement very restrictive, high-standard specifications and bearing lawful responsibility according to the National “Technical Specification of Tunnel Lighting on Highway, Expressways” .**
- 2. Tough Maintenance Problems on Tunnel lighting Application.**
- 3. Public Safety and Social responsibility concerns.**



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Key Technical Features of LED lighting

- 1. Luminous efficiency of lighting fixtures & systems (rather than the light source efficiency) is the only meaningful way of measuring the energy level. The energy-saving data provided by other majority companies are of relative value and are often miss-leading.**
- 2. Heat dissipating technology and performance are major factors of lifespan of LED lighting devices. It is also the major challenges in design and applications for the current LED lighting products.**
- 3. Careful selection of quality LED has direct influence on Luminous efficiency and lifespan of LED lighting devices.**
- 4. Reliability and Lifespan of Power Supply play important roles.**
- 5. Distribution map of Luminous intensity will affect on the illumination distribution, lighting evenness and lighting contrast to background.**
- 6. It is unit cost per lighting flux, i.e., the cost per lumen rather than per Watt that is the key economic index to value LED Lighting devices.**



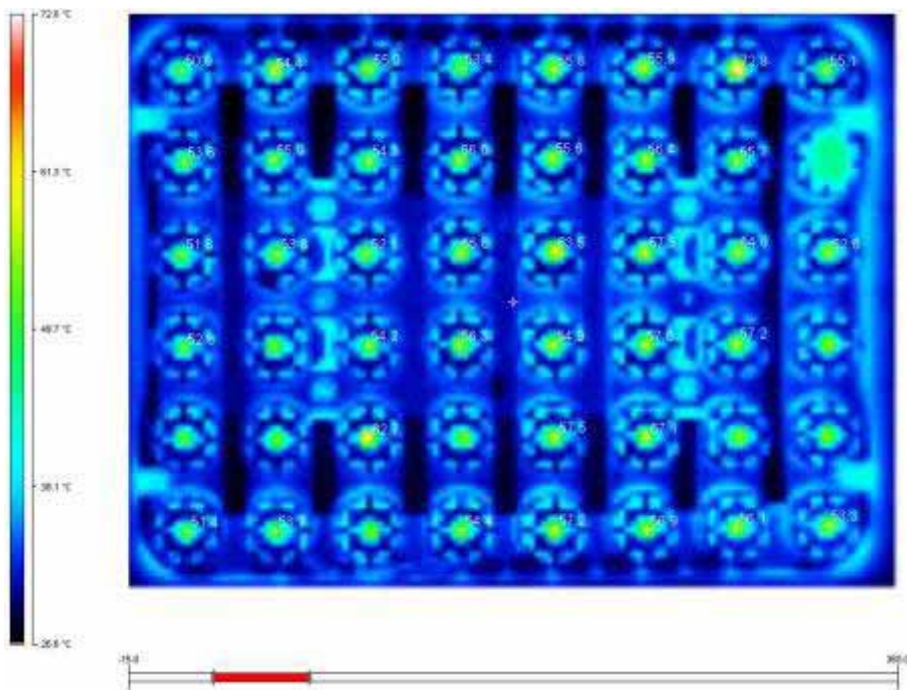
Our Advantage - - High Efficiency of Lighting Device

The lighting efficiency of Sansi's Lighting Devices has been tested among the highest with more than 84 Lm/W by the USA ITL Lab – a DOE nominated Lab. The Independent Test Lab testing results are as followed :

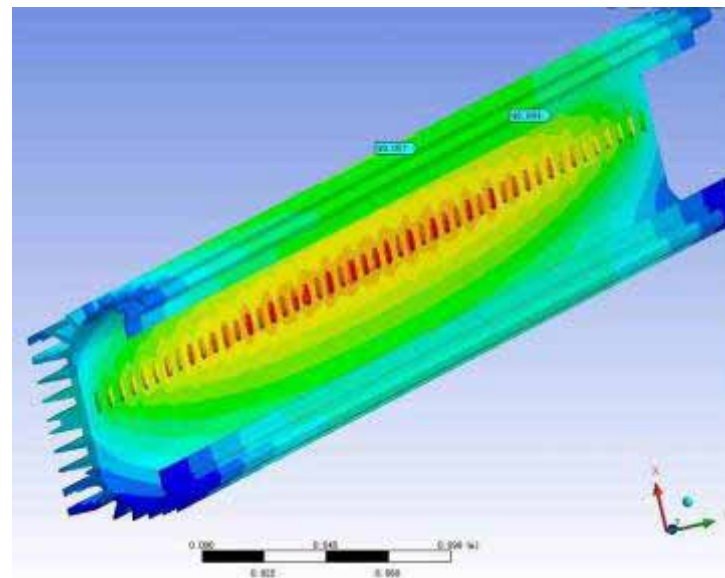
- 1. High LED lighting efficiency: 105 lm/W**
- 2. High Device efficiency: 85%**
- 3. High PS efficiency: 90%**
- 4. Lowest degradation rate in the industry <30% after 5 yrs**



Advantage of LED lighting - Unique Heat Dispersing Technology



Heat Distribution Map of Sansi LED lighting

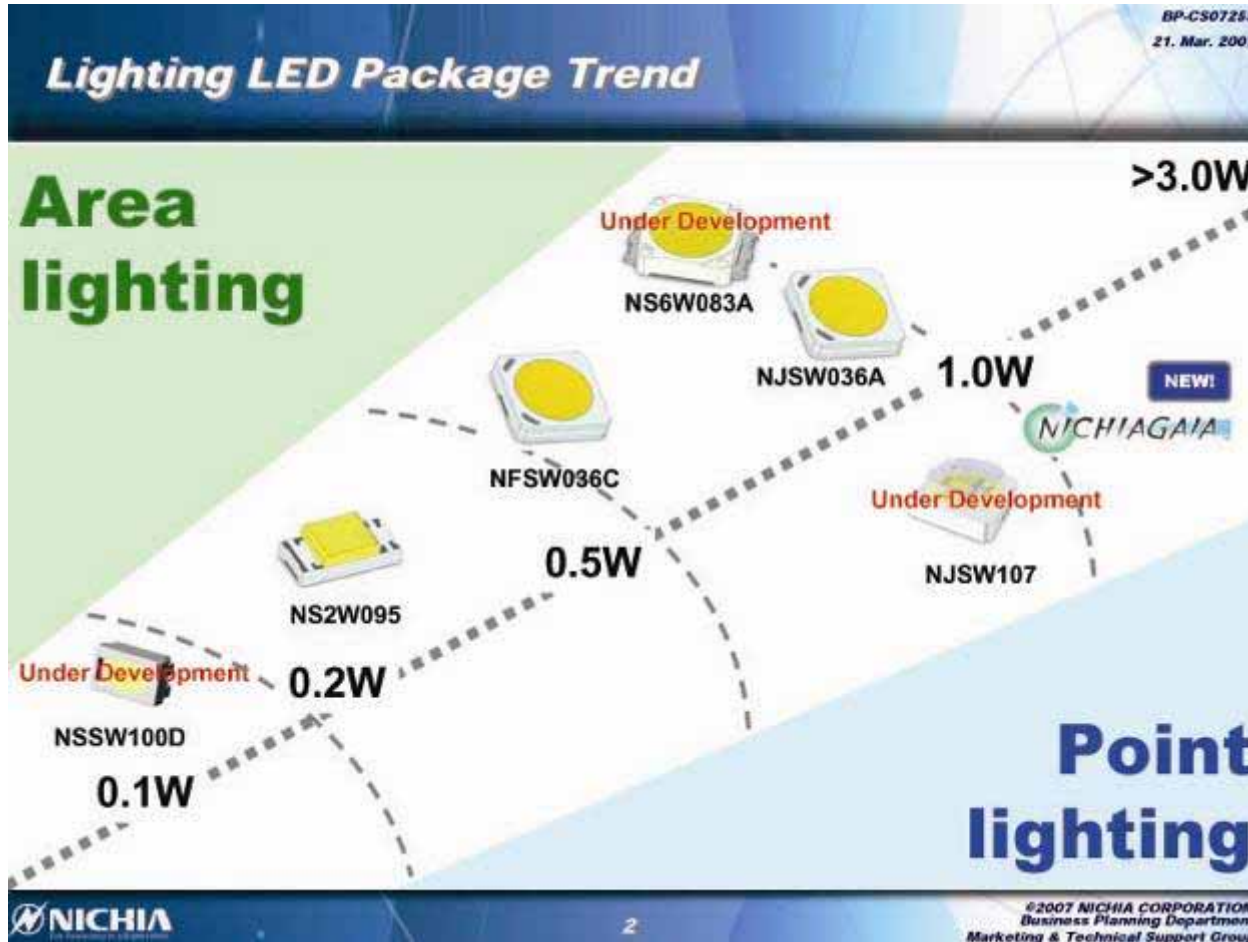


Heat Distribution Map of Traditional LED lighting



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Our Advantage - - LED Properties



High Lighting

Efficiency :

100 - 110 Lm/W

Low Degradation :

<30% after 5Y



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Our Advantage - - Power Supply

High Efficiency: 90%

High Power Factor: 95%

Protection Rating: IP66

High Reliability: MTBF 20000 Hrs

Power Supply: AC95 ~ 265V , 50Hz

Dimmer Control: 0 ~ 100% , 8 Level

(Optional)

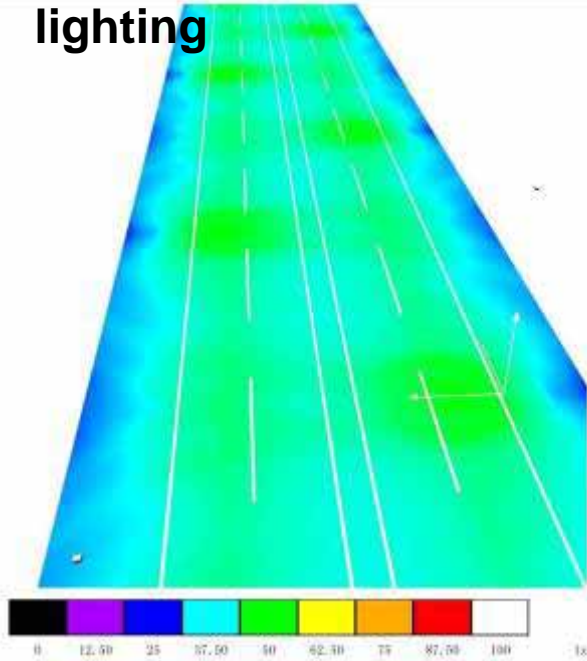




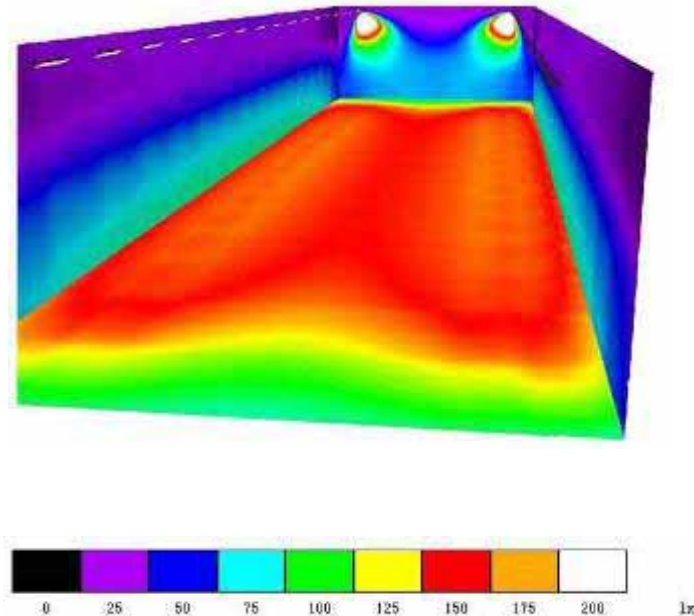
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Our Advantage - Optical Design and Analysis

Illuminance distribution map of LED street lighting



Illuminance distribution map of LED tunnel lighting



Making precise analysis of luminous intensity diagram on site using expensive professional equipment

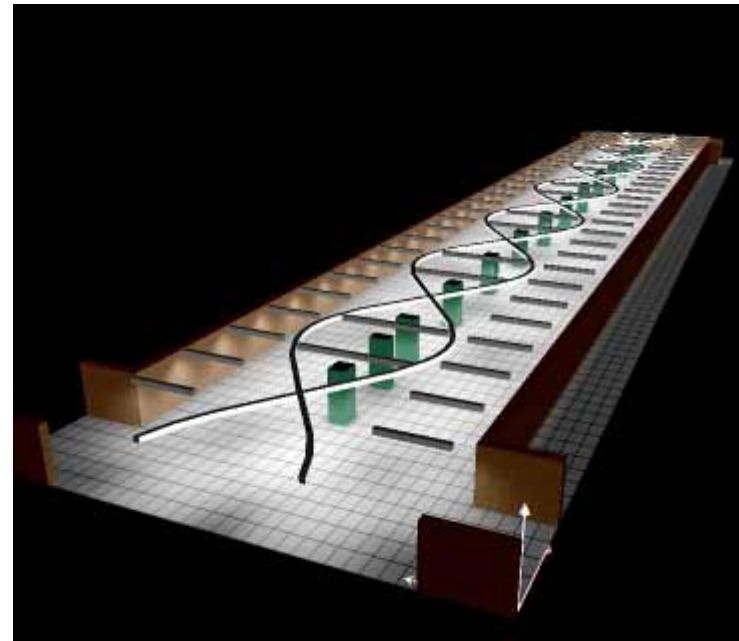


*Our Advantage - - Professional
Optical design and application*

Inside the Train Carriage



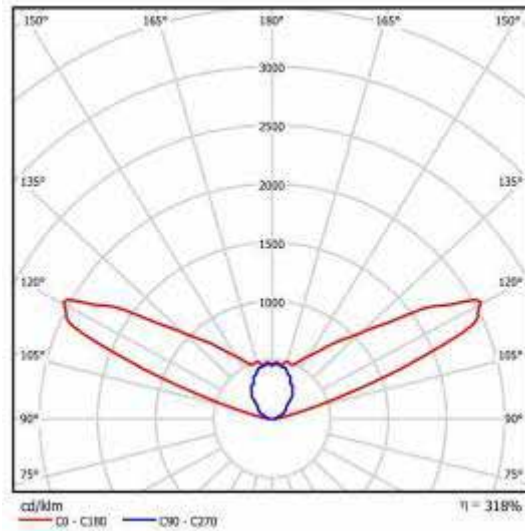
Railway Station



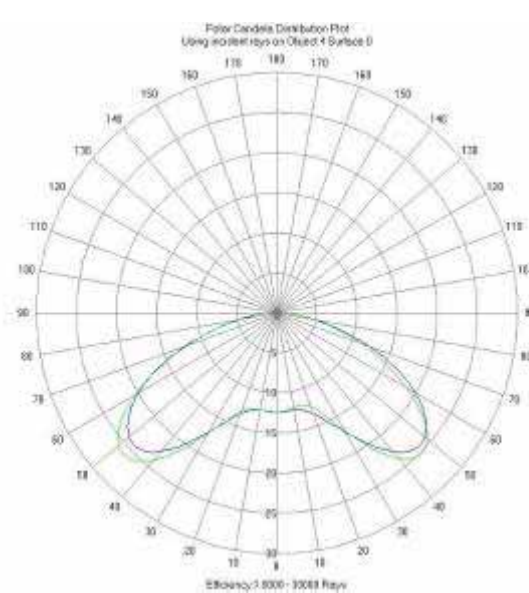
**Making precise analysis of luminous intensity diagram on site using
expensive professional equipment**



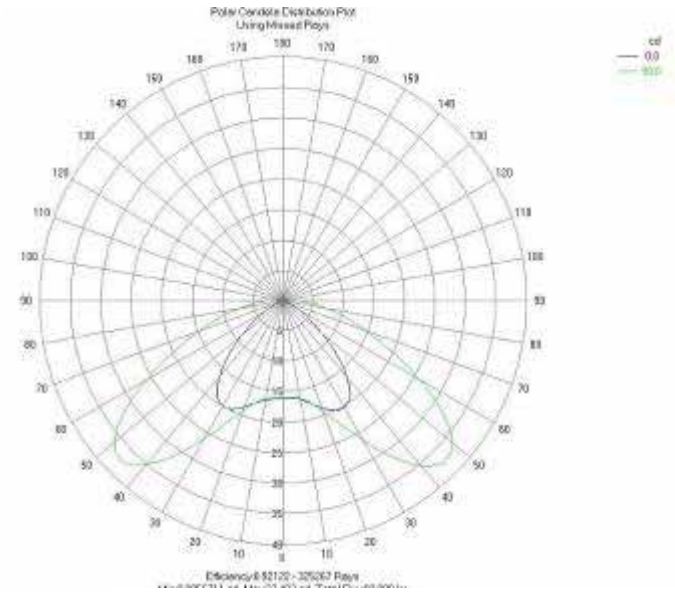
Our Advantage - Optical Design and Analysis



Street Lighting



Metal Halide replacement
LED lighting



Tunnel lighting

**Making precise analysis of luminous intensity diagram
and LED lighting design using professional equipment**



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Our Advantage - - Test Equipment



**Testing
Instrument**



On Site Testing

**Testing and making analysis of all lighting data using
various testing instruments**



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Features of Sansi's LED Street Lighting

- 1. LED Lighting Module can be installed and taken off easily by using a screw driver without opening the cabinet**
- 2. Unique patented unit matrix structure guarantees excellent heat dispersing performance**
- 3. The style of Lighting devices can be designed and customized easily on request**
- 4. It's curved surface make it harder to accumulate snow or dust**
- 5. Modular design enables various applications**
- 6. Constant current drive and long lifespan of power supply**
- 7. Bat-like Wings with secondary optical design produces uniform, even luminosity**
- 8. The whole lighting devices has been tested among the highest luminosity with more than 84 Lm/W by the USA ITL Lab**



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Features of Sansi's Street lighting





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Lamp Configuration - Street Light





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Lamp Configuration - Lighting Solutions





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LED Street lighting, area lighting





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Projects - LED lighting





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LED Street lighting, Solar-wind lighting





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Projects - LED lighting





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Projects - LED lighting





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Projects - LED lighting





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Projects - LED lighting



**Gas Station Lighting,
Minnesota, USA**



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Projects - LED lighting



Street Lighting



Four tunnels LED lighting at XIAOKANG highway in SHANGXI Province

West-lake Pilot project of JINGLIWEN highway in ZHEJIANG Province

Four tunnels LED lighting at RUIGAN highway in JIANGXI Province

LED lighting for COCA COLA WUHAN factory roadway

LED landscape lighting at GUANZHOU downtown area tunnel

LED landscape lighting at SHANGHAI LUJIAZUI Ring road

LED landscape lighting at SHANGHAI Yangtze River Bridge

LED lighting applications at highway toll station in Tianjing

Municipality/GUANDONG province/JIANGXI province

LED lighting in American Buses

LED Lighting in passenger cabin of Boeing aircrafts



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Projects - LED lighting



One segment of experimental trial of Sansi tunnel lights located on Shanghai Fuxing Road



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Projects - LED lighting



**Shanghai Huqingping Highway
Waiqingsong Toll Station**



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Projects-LED Tunnel lighting





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Projects - LED lighting



**Jiangxi Jingde Town—Yingtang
Highway Huangzhushan Tunnel**



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Projects - LED lighting



**Shanxi Zhaxiao Highway
Ferry Entrance Tunnel**



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Projects - LED lighting



**Fujian Quansan Highway Chaoyuan
Tunnel, under construction**



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Projects - LED lighting



**Zhangjiashan Tunnel on
Chongqing Highway**



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Projects - LED lighting



**Yunnan Fuyan Highway Donglai
Tunnel Left Bound Traffic**



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Projects - LED lighting



Hunan Province Chang Ji Highway Liangshuijing Tunnel



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LED Lamp Configuration - Lighting Solutions LED tube light and LED bulbs





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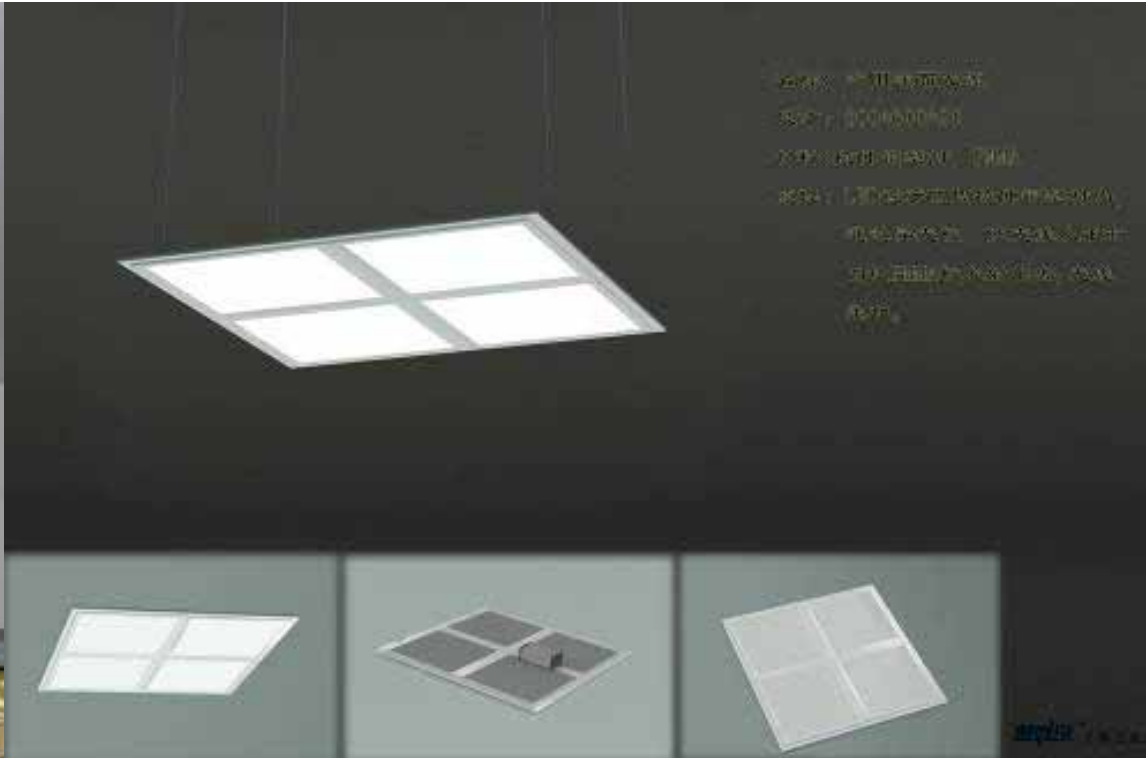
LED Lamp Configuration - Lighting Solutions





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LED Lamp Configuration - Lighting Solutions LED Ceiling light





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Projects - LED lighting



Hotel LED lighting



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Projects - High VMS and others





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Projects - LED Video Billboard and Display systems



Shanghai Oriental



Shanghai Boat Display



No 1 Display in Asia



**Shopping Mall in
Shanghai**



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Projects - LED Video Display



Shenyang Stadium



Beijing South Rail Station



Shanghai Stadium



Shanghai F1 Circuit



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Projects - LED Display



USA



Europe



Japan



Korea



Thank You!