YJ-AP-MOD-3030-1CC-2765

LED Module

Applications

- High-end architectural lighting
- Photographic/broadcast lighting
- Horticulture lighting
- Human-centric lighting
- Photoelectric device and relevant research

Features

- Ultra homogeneous spectrum
- Industrial grade high CRI performance, TLCI & TM-30 specified
- Optimized efficacy for full-spectrum
- Ultra consistent and precise tunable white color with Yujileds® SimpleBinning technology (equal to <3-step MacAdam)
- 280mm (length) × 20mm (width), 48 LEDs
- Typical 130mA, 36V DC (per color)
- Aluminum substrate for excellent thermal dissipation
- Slim width, easy assembly

About Yujileds®

Rev Version: 2.0
B3210005.26

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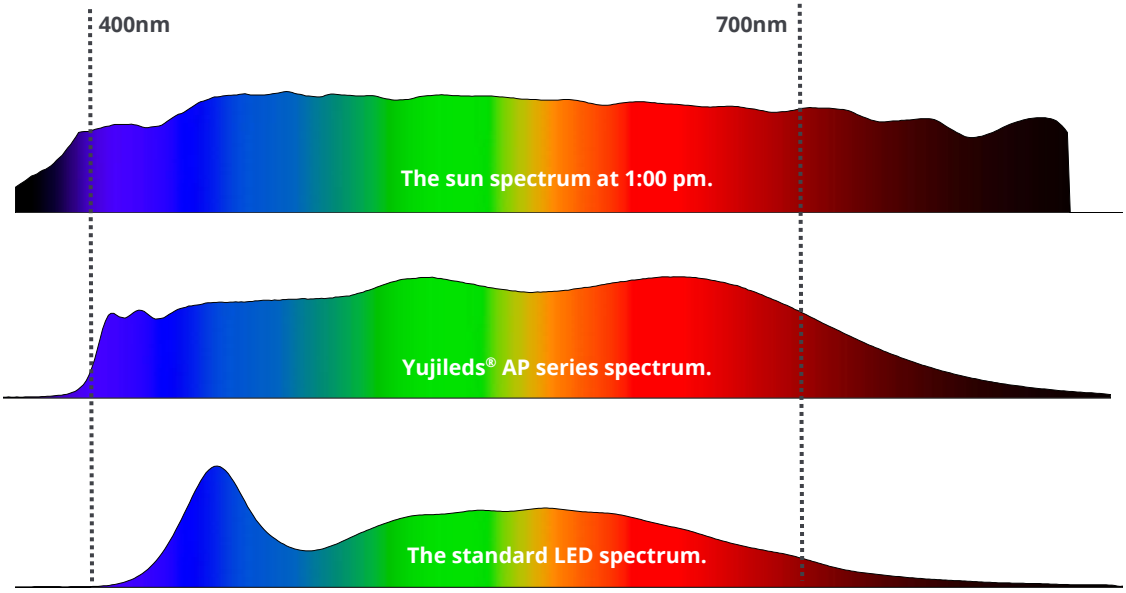
General description

Improving the artificial lighting as close to the sunlight is the eternal pursuit for the top LED manufacturers. However, the artificial lighting gets far away from the naturalness after the incandescent and halogen because the illumination principles of the later artificial lights are far away from the blackbody radiation, including LED.

The sun essentially provides complete and homogenous spectral radiation in the visual wavelengths, while an LED is always combined by the blue or purple semiconductor die with blue/green/amber/red phosphors, in consequence, it is visualized to observe that from an LED spectrum, peaks and gaps always exist because of the respective characteristics of the die and phosphors, which can not be avoided generally.

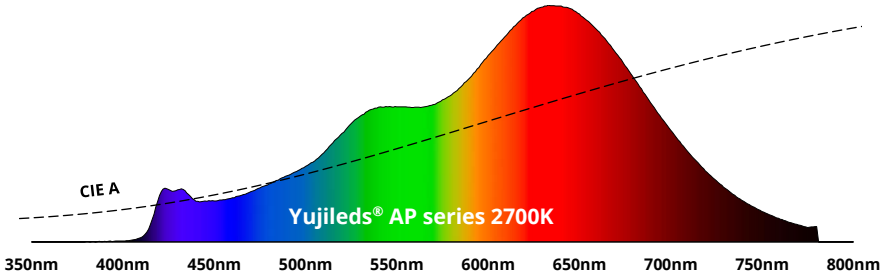
98% similarity to the CIE A, D50 and D65 illuminant

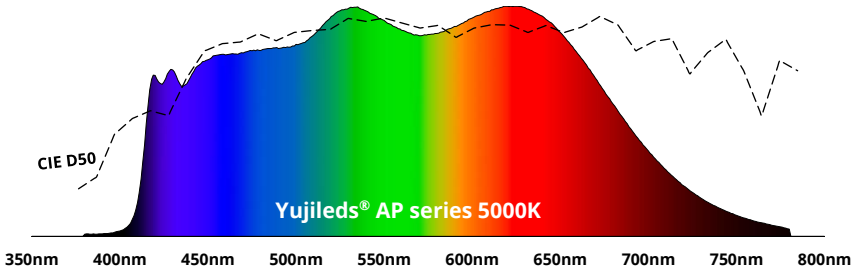
Yujileds® AP series 3030 LED is based on innovative and revolutionary technologies. It provides an unprecedented spectrum with ultra-homogeneous features within one compact package, where the color rendition performs superbly and stably. The AP series LED comes with three standard spectra of 2700K, 5000K and 6500K corresponding to the CIE illuminants of A, D50 and D65 respectively. Compared to these standards, the AP spectra achieve 98% similarity within one compact package, unprecedented for all of the market's LEDs.

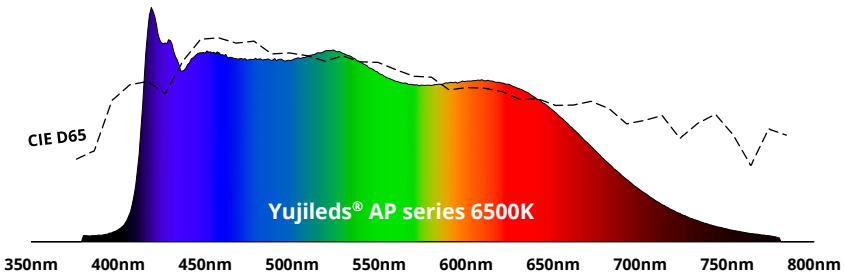


Refuse any peaks or gaps

Standard illuminants always present completely uniform spectral power distributions, where a recent artificial light source can never simulate to a promising degree, especially for LED considering its particular illuminating principle. With the latest technology of Yujileds phosphor and package, it is finally available to achieve the homogeneous spectra, in AP series LED spectra, there is no longer strong peaks or obvious gaps like a regular LED.

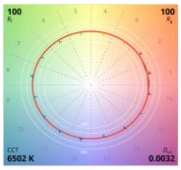
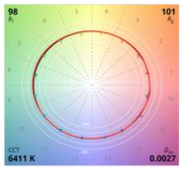
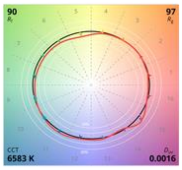
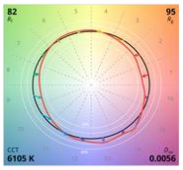
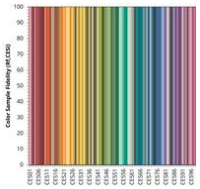
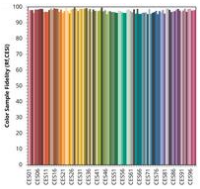
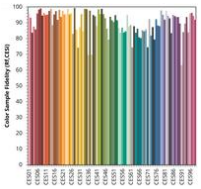
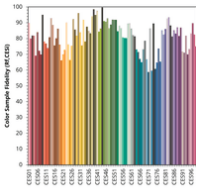






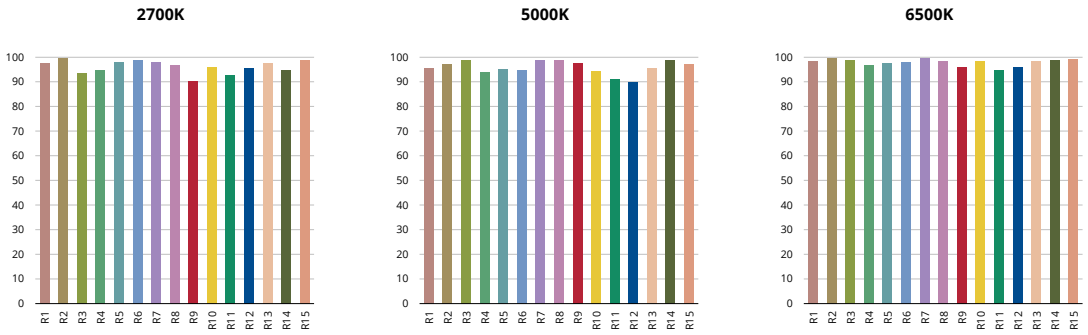
Top-level TM-30 score

The TM-30 is a comprehensive and most convincing method for color rendition. It provides more metrics as the reference, including color fidelity and gamut from 99 evaluation samples, which means, compared to conventional metrics, the TM-30 will disclose more details to present the most authentic performance on color rendition.
The AP series TM-30 measurements are the most intuitive testifications. Giving the Rf 98, Rg 101 and all 99 color fidelities above 95, Yujileds AP series technology wins the highest level on the color rendition, not only for individual metrics but is stable quality.

	Daylight	Yujileds® AP LED	Standard high CRI LED	Standard LED
Fidelity index (Rf)	100	98	90	82
Gamut index (Rg)	100	101	97	95
Fidelity of 99 CES	All = 100	All > 95	Average 90	Average 82
Color Vector Graphic (CVG)				
Color Sample Fidelity				

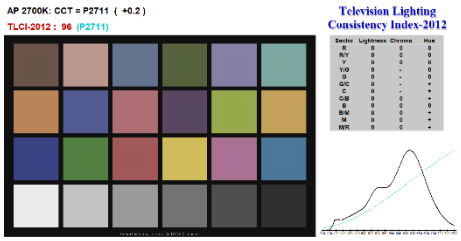
Up to 99 CRI

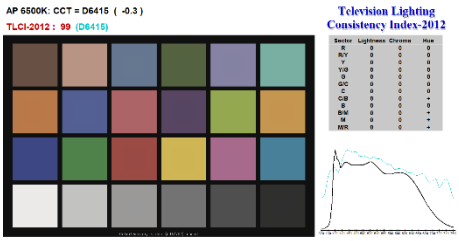
Undoubtedly, the AP series performance under CRI metric system is equally top level. Achieving R1-R15 all above 90, the CRI score is up to 99 and is stable on different color temperatures of 2700K, 5000K and 6500K.



Up to 99 TLCI

Halogen and daylight are the most frequently used color temperatures in the broadcasting lighting environments, with the superb homogeneous spectrum and measure by the TLCI metric, the AP 2700K and 6500K are not compromised in the quality to ensure the correct colors in the cameras.





The Yujileds® module and customization service

The Yujileds® module and customized service are for professional customers who care about the color accuracy, spectral consistency and other optical parameters besides the PCBA quality, therefore, we treat our LED module as an integral light source and control the specifications accordingly rather than a simple engineering procedure of SMT. The Yujileds® customized module is tailor-made for the customers who may have the requirement or difficulty solving the following:

Individual LED vs LED module	Know well or don't understand the features and discrepancy between the individual LED and integrated LED module, but it is challenging to solve and control the consistency issues with balanced cost performance for yourself.
Rigorous datasheet and test report	The LED module plays a crucial role for your light, and you need serious specifications for exact calculation to create the maximum values to the products for your customer. Need professional test report, control and analysis for every batch of the LED module.
Performance upgrade	Focus on your product's duration, plan to upgrade timely, and need to track the historical data as references.
Confidential promise	Plan to run the confidential projects without disclosing any key information of know-how to the markets.
Crossover consultancy	Need professional consultancy in both technical and industrial ways, especially regarding the interaction between optics and electronics and precise control.
Duration	Need stable supplied materials up to 10 years no-change.

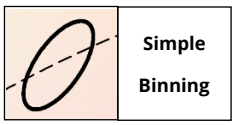
The module also supports the unique service/certification by Yujileds® as described below.

TM-30 specification

The most advanced colorimetric for color rendition, widely recognized as the successor of CRI.

TLCI specification

Based on the Macbeth ColorChecker, for evaluating the colorimetric quality of the broadcast lighting.



SimpleBinning specification

Simplify the chromaticity binning with TrueChroma data support to provide the most economical, simple, and practical solution to customers.

Photometric data

Luminous intensity distribution and illuminance data for simplifying the lighting design.

RoHS 2011/65/EU compliance

CE compliance

REACH compliance (Phosphor)

Ordering information

PART NUMBER	PRODUCT CODE	RATED CURRENT	CCT
YJ-AP-MOD-3030-1CC-2765	B3210005.26	130mA (per color)	2700K – 6500K

Characteristic

Electrical-optical characteristics (T_A = 25°C, 130mA[1] per color)

PARAMETER	SYMBOL	VALUE			UNIT
		MIN.	TYP.	MAX.	
Power	P	-	9	-	W
Voltage	U	-	36	-	V
Luminous flux[2]	Φ_{2700K}	-	1000	-	lm
	Φ_{6500K}	-	1100	-	
Color rendering index	Ra	-	98	-	-
	Ri (i = 1-15)	90	-	-	-
Fidelity index[3]	Rf	-	98	-	-
Gamut index[3]	Rg	-	101	-	-
TLCI 2012[4]	-	-	99	-	-
View angle	$2\theta_{1/2}$	-	120	-	Deg

(1). A heat dissipation device is necessary for the typical current driving.

(2). Tested by goniophotometer.

(3). Defined by the IES TM-30-18 method, this data is for trial.

(4). Defined by the EBU, TLCI is the abbreviation of Television Lighting Consistency Index, this data is for trial.

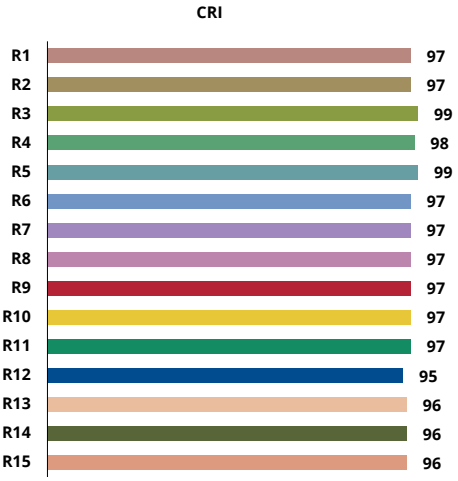
Luminous intensity distribution and illuminance[1] (T_A = 25°C, 260mA)

CCT	HEIGHT	DIAMETER	AVG. ILLUMINATION	MAX. ILLUMINATION
2700K	1m	314.57cm	91.95 lx	335.1 lx
6500K		320.59cm	93.30 lx	357.21 lx

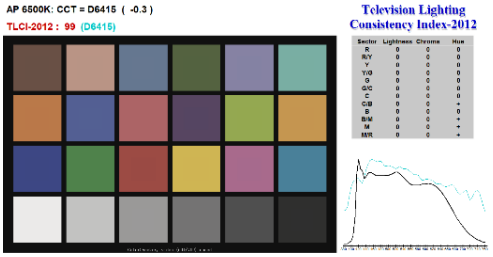
(1). The full luminaire photometric test report (IES/LDT file) can be downloaded from www.yujiintl.com.

Characteristic

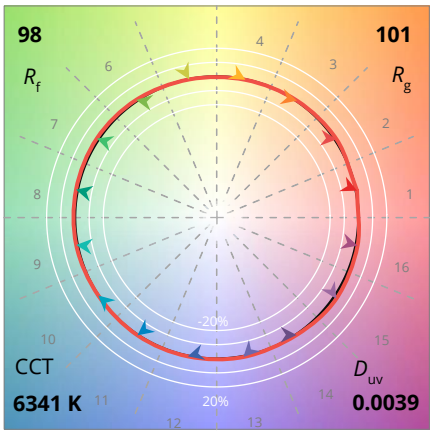
CRI graph (2700K)

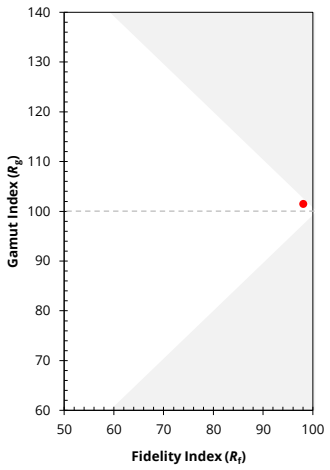


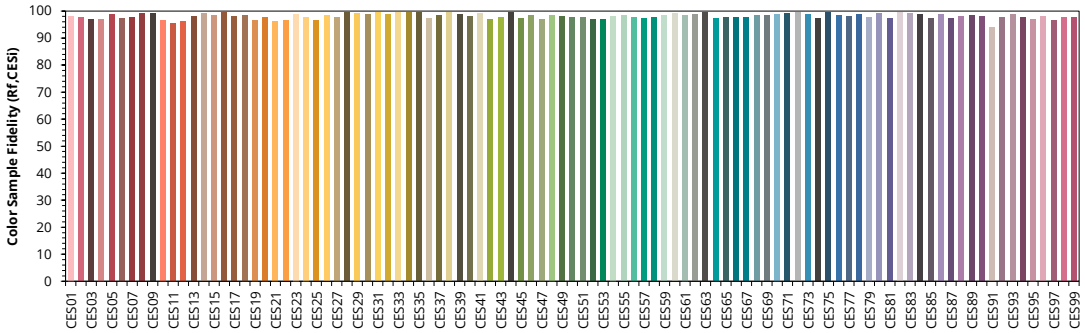
TLCI (6500K)



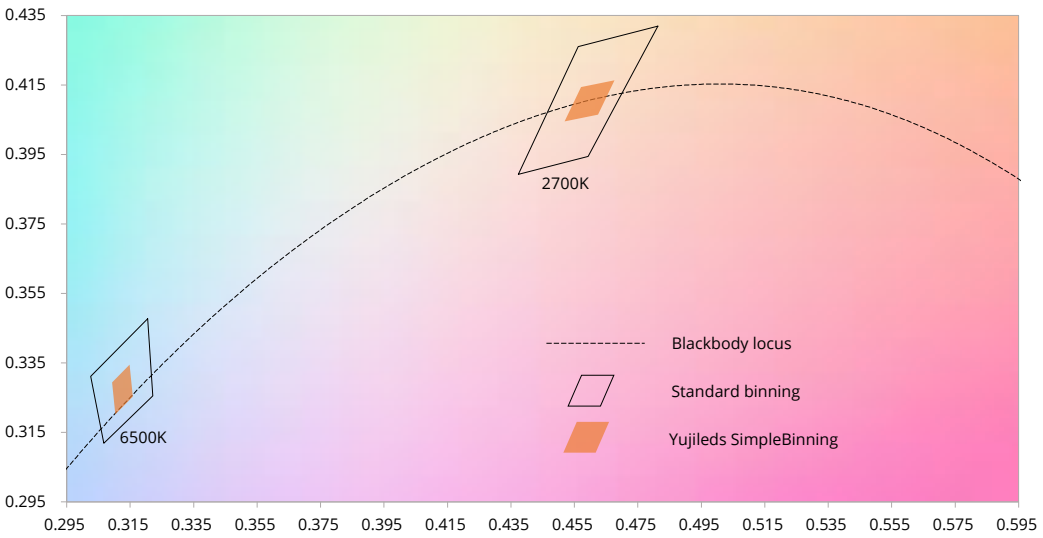
TM-30 graph (6500K)







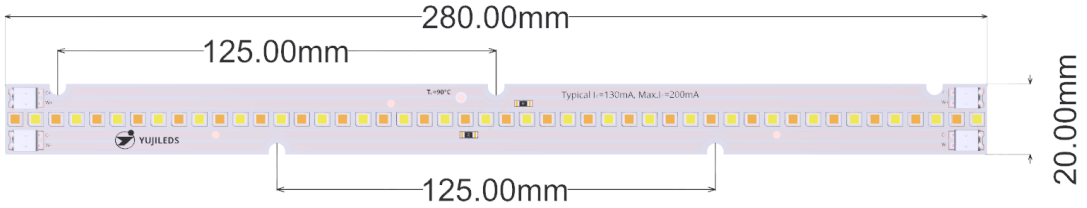
Chromaticity group and diagram



PCB characteristics

Property	Parameter
Material	Aluminum
Thickness	2.0 mm
Thermal conductivity	2.0 W/m•K
Copper thickness	1 Oz
Front side solder mask	White
Silkscreen color	Black
Solder	Pb-Free HASL

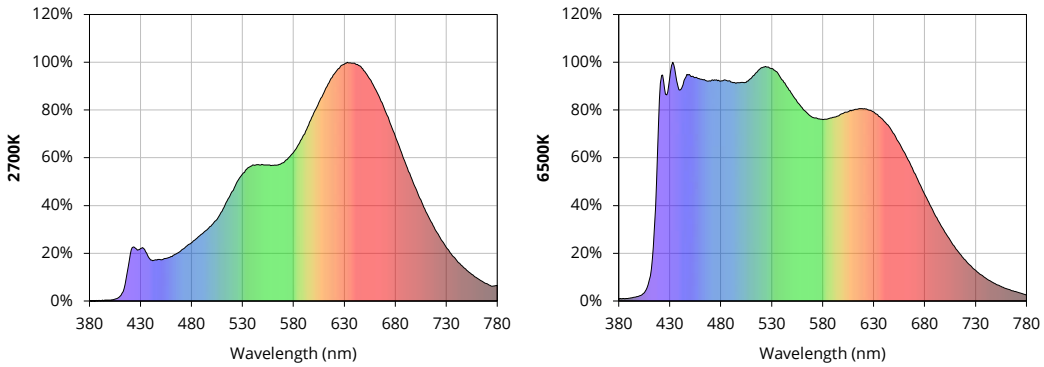
Dimensions



Characteristic graph

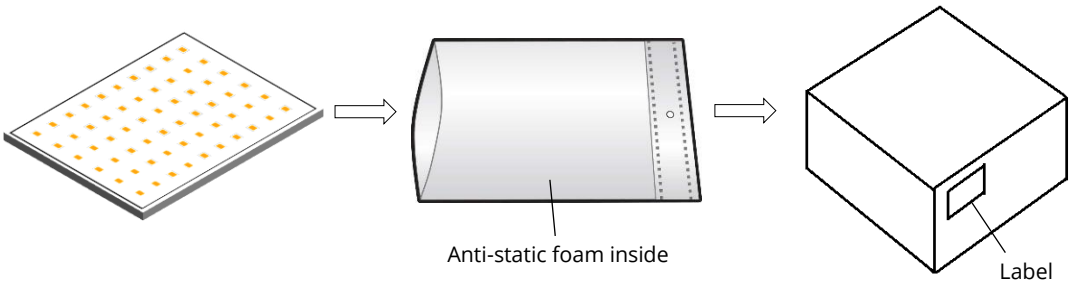
Typical spectral power distribution (normalized)

All characteristic curves are for reference only and not guaranteed.



Packaging

PCB | Anti-static PET bag / Blister packing | Box



The size of box depends on the quantity.

About Yujileds

Our story - Start from the superior stable red LED phosphor.

We started to make LED phosphor materials in 2006. White LEDs were still in very early stage, the industry focused on improving device brightness and efficiency via yellow phosphor very much. No one cared about the light quality. Based on this situation, we took a different approach and focused on red phosphor technology, which is the most important phosphor recipe for high CRI and/or low CCT LEDs, and it made Yuji become a JV partner with Mitsubishi Chemical from 2012.

Today, we are well known for our comprehensive research and full line-up production of LED phosphor from ultra-violet to near-infrared, and we are proud to commit to providing superior stable and efficient phosphors to the worldwide markets.

Our technology - Focus on LED spectrum innovation.

The industrial structure of both phosphor and LED gives us a unique view to develop our spectrum recipes. Compared to the general LED manufacturers, we have comprehensive information in evaluating the feasibility for both technical and commercial aspects. LED spectrum technology is not only about the quality of white LEDs, but also for different applications which have specialized requirements in lighting.

Yuji is one of the few companies that provide the service of designing or customizing a specific spectrum for clients, our confidence comes from the years of accumulation in focusing on the spectrum technologies and the control of LED phosphor and LED die supply-chain with thousands of successful cases in the past years. Innovating LED technologies and giving them commercial values are our eternal driving forces.

Our product - Yujileds®, stands for high-performance LED.

The trademark of Yujileds® is the identification of the LED products developed and manufactured by Yuji. We put our understanding of the LED technologies and the standard of our quality control into every LED we make. Regardless of any product series, we pay attention to expressing the high-performance feature and achieving the product value for clients and never compromise in pursuing the true performance.

Furthermore, we also care about every detail of any documentation we prepare for the product because we understand the importance to transmit accurate information to clients. It is even more critical for clients to obtain

the truth to decide the solution, rather than just a nominal high-performance.

Our client - Outstanding game players in different fields.

Clients are our proudest achievements, now over 200 of our clients are the best game players in their fields in more than 33 countries. We regard the clients' successes as our biggest accomplishments and appreciate their contribution in different fields, clients use our LEDs not just for simple lighting, but to design the lighting for plants, cameras, sensors, health, circadian rhythm, aminals, and other industries that we have never imagined that our technologies can be utilized, that makes our work so meaningful.

Our service - Professional supporting team.

There is a group of people in Yuji passionate about creating maximum value for our clients. We have accumulated experience in different projects. Currently, the company gathers more than 30 experts from various fields of semiconductor, chemistry, optics, photoelectricity, circuitry, materials and color science.

Our sales team is well trained in deep LED technologies and has skilled global communication experience. Not just for sales, our team is more like a specialized consultancy to help every client succeed in different projects, and we do not only provide professional business service, but also support in the supply chain, logistics, marketing and technical discussions.

Contact us - We look forward to providing our efficient service for you.

LED website: www.yujiintl.com
Find Yujileds® high-performance LEDs, read our insights into a variety of advanced technologies and applications.
Contact: info@yujigroup.com

LED lighting website: www.yujilighting.com
Find our state-of-art LED lamps and luminaires designed for improving the lighting experience with the vision of illuminating the future.
Contact: lighting@yujigroup.com

Online shop: store.yujiintl.com
Shop your favorite Yuji Lighting product with rapid and professional service.
Contact: webstore@yujigroup.com