iLighting Global Enterprise Co., Ltd.
智 能 環 球 企 業 有 限 公 司

HK LIGHTING KNOWLEDGE & VALUE-ADDED SERVICES

• 照明知識 · 增值服務 •

Your Energy Saving Solution Partner

- Customization Options
- Qualification Certification
- Lighting Simulation
- Lighting Knowledge

Bright × Health

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G2502

Editor's Note 編者的話

It's easy to spot when browsing a store: good lighting attracts customers and boosts efficiency, while poor lighting can turn away shoppers and disrupt work. Commercial lighting is more than just a way to illuminate a space; it's an invisible aid. We are committed to helping commercial spaces enhance the customer experience, achieve operational efficiency, and achieve energy conservation through innovative smart lighting solutions.

逛店時不難發現：好燈光能拉客流、提效率，差燈光卻會勸退顧客、影響工作——商業照明從不是“裝燈亮空間”，而是空間的“隱形幫手”。我們致力於透過創新的智慧照明解決方案，幫助商業空間提升客戶體驗、營運能源效率與節省能源。

Want to adapt the lighting to create an atmosphere? We remove the product customization core (color temperature, size, light effect), give enough reference, avoid choosing "universal models" (see P6-P7 for details). Worried that the effect will not match? The lighting simulation service can preview the post-installation appearance in advance (see P8 for details), see clearly the problem of light and dark, glare, say goodbye to "order by feeling", avoid work waste.

想要適配燈光營造氣氛?我們拆透產品客製化核心（色溫、尺寸、光效），給足實在參考，避免選「通用款」（詳見 P6-P7）。怕效果不符?照明模擬服務能提前預覽安裝後樣子（詳見 P8），看清明暗、眩光問題，告別 “憑感覺下單”，避免返工浪費。

We don't talk about "what we have," we help you solve "what you want." If you'd like to optimize the lighting in your new product display area or ask about installing smart emergency lighting, feel free to contact us. Good commercial lighting always meets your business needs. Next, let's make Guangbang Space more powerful!

我們不說 “有什麼”，只幫你解決 “想要什麼”。若你想優化新品展區燈光，或問 “智慧緊急照明怎麼裝”，隨時聯繫。好的商業照明，永遠跟著你的經營需求走。接下來，一起讓光幫空間更「能打」！

關於我們/About us

iLighting Global Enterprise Co., Ltd.

智 能 環 球 企 業 有 限 公 司

iLighting Global Enterprise Co., Ltd., founded in 2007, is a professional lighting company integrating design, manufacturing and supply. The company is committed to the research, development, manufacturing and sales of energy saving and environmental protection products.With 15 years of experience in the lighting industry, we offer OEM and ODM services. Our extensive experience enables us to accurately understand customer needs and provide stable and reliable customized products. We can customize a variety of high-efficiency, high-visibility, high-configuration lighting products, as well as environmentally friendly and energy-saving lighting solutions, to meet customer needs.

智能環球企業有限公司成立於2007年，是一家集設計、製造、供應於一體的專業照明公司。 公司致力於節能環保產品的研發、製造和銷售。公司從事照明行業15年，可為客戶提供OEM和ODM服務，累積的深厚經驗使我們能精準掌握客戶需求，並提供穩定可靠的客製化產品。可以根據客戶需求定制各種高光效、高可視度、高配置的照明產品以及環保節能的照明解決方案。

High Quality LED Lighting | Customized | System-wide Energy Management | Green | Low Carbon | Energy Saving

Company Brands

iLIGHTING® Green • Professional
Engineering & Specialty
工程與專業

LED Lighting EAST®
Commerical Application
商業應用

FSV®
Retail Market
零售市場

Jig&Kit®
Decorative Lighting
裝飾照明

CYP 10 10 TECH®
Intelligence & Lighting Control
智能照明控制

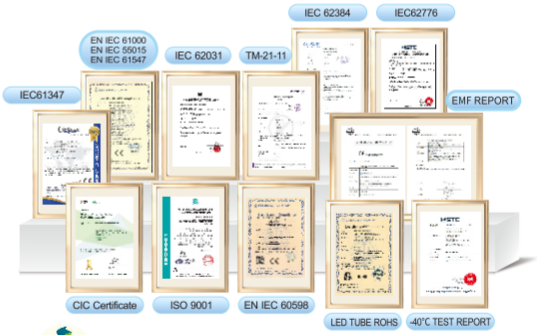
Qualification Certificate

Certificate Authentication

The products have obtained more than 100 CE certificates and lighting professional standard certifications; dozens of short-term patents in Hong Kong, China and national patent certificates in mainland China.

產品獲得100多項CE證書及照明專業標准認證；数十項中國香港短期專利和中國大陸國家專利證書。

資質證書 實力認證
Certificate Display



HKGBC 香港綠色建築協會

CIC GREEN
PRODUCT CERTIFICATION
香港綠色建築協會

CE RoHS

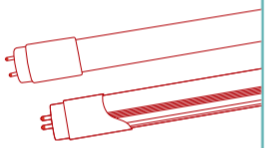
CE/LVD、CE/EMC、ROHS
IEC 62471, IEC 62493, IEC 62776, IEC 62778, IEC 61347, IEC 62031, IEC 62384,IEC 62612, IEC62560,IEC62717, IEC62722,TM-21-11, -40°C TEST REPORT,

Our Products

We develop, produce and sell 11 product series including LED tubes & light strips, kitchen & cabinet lights, downlights & spotlights, mining lights & street lights, IoT LED bulbs & track lights, etc., which have been recognized by consumers and have maintained good cooperative relationships with many merchants.

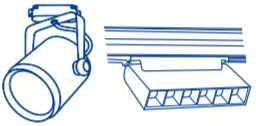
我們研發並生產銷售LED燈管&燈條、廚房&櫥櫃燈、筒燈&射燈、工礦燈&路燈、物聯網LED燈泡& 軌道燈等11個系列產品，獲得了消費者的認可，並與眾多商家保持了良好的合作關係。

11 Main Series

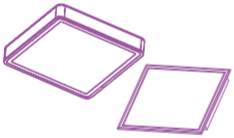


Series1. LED Tube

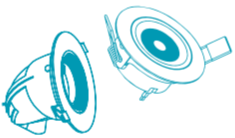
Series2 .Strip & Cabinet



Series3. Track Light



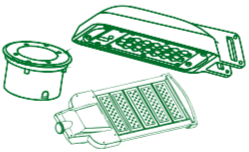
Series4. Panel Light



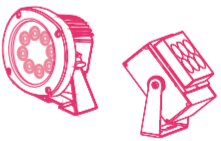
Series5 .Spot Light

Series6. Down Light & Circular Light

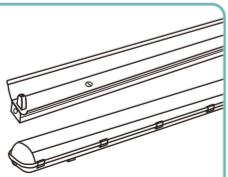
Series7. LED Bulb



Series8 .Street Light & Ground



Series9. Flood Light



Series10. Batten & Ip65

Series11 .Smart Home Solutions

規格參數可定制
Parameter customization

光效(lm/W)、功率(W)、顯色指數(CRI)，可根據客戶需求定制。
Luminous efficacy (lm/W), power (W), and color rendering index (CRI) can be customized according to customer needs.

OEM & ODM

iLIGHTING Global Enterprise Co.Ltd.provides LED Lights OEM and ODM services for customers the world over. You can also enjoy our OEM and ODM services through the following:

智能環球企業有限公司為全球客戶提供LED燈OEM和ODM服務。您也可以透過以下方式享受我們的OEM和ODM服務：

01 Provide Parameters 提供參數

You may provide the parameters of related product(i.e.the power output, luminosity, visible color index etc). Based on the parameters you provide we will design and produce aproduct.

您可以提供相關產品的參數(例如:輸出功率、光度、可見光指數等)，我們將根據您提供的參數進行產品的設計、生產。

02 Provide Samples 提供樣品

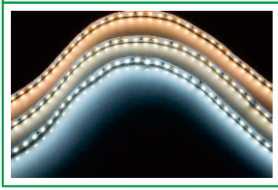
Send us a sample product and we will produce our products based on your sample.

向我們發送樣品產品，我們將根據您的樣品生產我們的產品。

03 Product Selection 產品選擇

Choose iLighting products you are interested in from our website and we will add your logo to the finished product.
Website:www.ilighting.com.hk

從我們的網站上選擇您感興趣的iLighting 產品，我們會將您的徽標添加到成品上。
網址:www.ilighting.com.hk



Whichever method you choose, ILighting will provide you with the first-rate OEM and ODM service from start to finish.Please send your requirements to **info@ilighting.com.hk** to experience professional customized service.

無論您選擇哪種方式，ILighting 都將為您提供從頭到尾的一流 OEM 和 ODM 服務。將您的需求發送至 **info@ilighting.com.hk**，體驗專業的客製化服務。

Value-added Services
增值服务

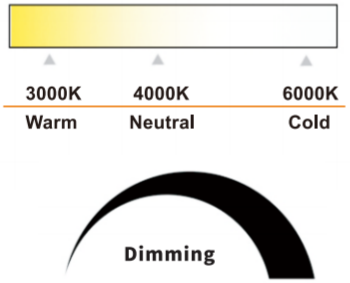
General parameter customization 常規參數定制

功率
Power

不同產品，不同尺寸可根據客戶需求定制不同功率。

Different products and sizes can be customized according to customer needs.

色溫和調光
Color temperature and dimming

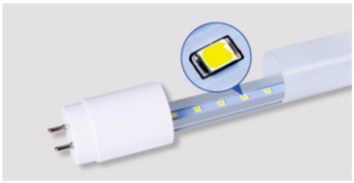


流明效率
Lumen efficiency

LED 流明效益高，更有最新歐洲 A 級能源標籤，保證節電環保。100lm/w - 180 lm/w 可選。

LED has high lumen efficiency and the latest European Class A energy label, ensuring energy saving and environmental protection. 100lm/w - 180lm/w optional.

燈珠品牌
Lamp bead brand



三 星　綠 明　韓國首爾

功率因數
Power Factor

Minium Allowable Power Factor For LED Lamp With Integrated Driver

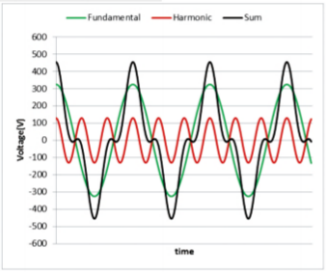
Rated Lamp Wattage(LW)	Minimum Allowable Power Factor
LW ≤ 5W	0.5
5W < LW ≤ 25W	0.7
LW > 25W	0.9

information refer to Hong Kong Voluntary Energy Efficiency Labelling for LED lamp- January 2017 EMSD (Electrical and Mechanical Services Department)

低諧波指數THD
Total Harmonic Distortion

總諧波指數THD<15%，有助於保護電網品質，延長精密設備壽命，滿足高標準辦公室及工業環境需求，可按客戶需要生產低總諧波指數< 10% ,≤ 6%

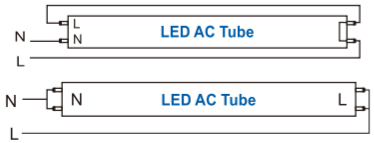
Total harmonic index THD<15%, helps protect the quality of the power grid, extend the life of precision equipment, and meet the needs of high-standard office and industrial environments. Low total harmonic index <10% ≤6% can be produced according to customer needs



燈管接線方式
Lamp wiring method

One Side Power Supply LED Tube
單端接線

Two Side Power Supply LED Tube
雙端接線



Single and double-side power supply LED tube
單雙端接線

燈頭T8轉T5
Lamp cap T8 to T5

T8 L管

T8轉T5 L管

T8轉T5 偏心針

燈管旋轉頭
Lamp rotating head

T5旋轉頭

T8旋轉頭

產品保養
Product Maintenance

產品保養選擇		
2年 two years	3年 three years	5年 five years

Fire Protection & Emergency Customization
防火 & 應急定制

防火V0物料
Fireproof V0 material

塑膠阻燃等級分HB、V-0(皆依UL94標準):
HB:最低等級,3-13mm樣品燃燒速度<40mm/min,<3mm樣品<70mm/min,或在100mm標誌前熄滅;
V-0:經兩次10秒燃燒測試,火焰10秒內熄滅且無燃燒物掉落。為您的商業空間提供更高等級的安全保障,符合嚴苛的消防規範。

Plastic flame retardancy grades are HB and V-0 (both based on the UL94 standard):
HB: The lowest grade, with a burning rate of less than 40mm/min for samples 3-13mm thick and less than 70mm/min for samples less than 3mm thick, or extinguished before the 100mm mark.
V-0: After two 10-second burn tests, the flame extinguishes within 10 seconds with no burning material falling. This provides a higher level of safety for your commercial space, meeting stringent fire regulations.

應急匹配
Emergency compatibility

與大多數應急電池品牌相容,並符合FSD法規PPA104第A11部分。

Compatible with most emergency battery brands and complies with FSD regulations PPA104 Part A11.

Lighting Design - IES & DIALux
燈光設計 - 配光曲線測試 & 照明模擬

配光曲線測試
IES

IES曲線測試標準是燈具(LED)照明產品的配光曲線測試。

主要測試項目包括:實測功率,電壓,電流,功率因子,全光通量,發光效率,光束角,照度,配光曲線圖,光度分佈,燈具效率,統一眩光指數等。

The IES curve test standard is used to measure the light distribution curve of LED lighting products.

Key test items include: measured power, voltage, current, power factor, total luminous flux, luminous efficacy, beam angle, illuminance, light distribution curve, luminous intensity distribution, lamp efficiency, and unified glare index.

照明模擬
DIALux

照明模擬服務是一種透過專業軟體或技術手段,對特定空間內使用的照明效果進行數位化類比分析的服務。其核心在於實際安裝前,精準預測光照分佈、亮度、色溫、顯色性等關鍵指標,在投入成本前,可視化最終照明效果,避免設計風險,確保投資回報最大化。

Lighting simulation services use specialized software and technical means to perform a digital, analog analysis of the lighting effects within a specific space. Their core objective is to accurately predict key indicators such as light distribution, brightness, color temperature, and color rendering before actual installation. This allows visualization of the final lighting effect before investment is made, minimizing design risks and ensuring maximum return on investment.

LED T8 玻璃燈管 IES(範例)

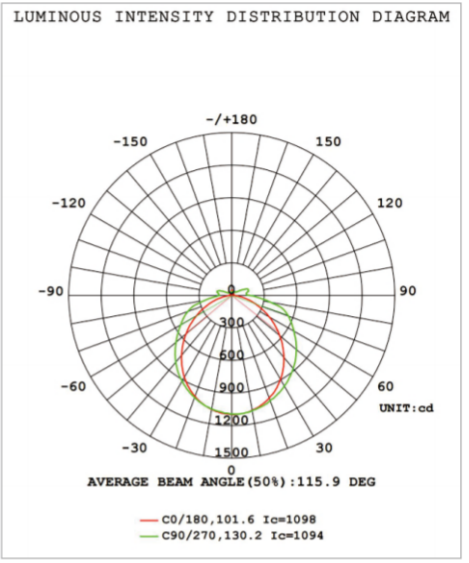
LED T8 Glass tube IES (Example)

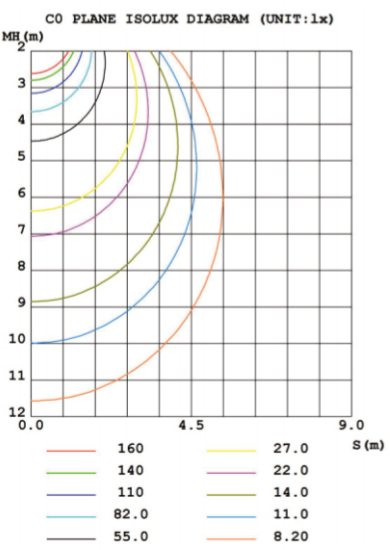
Product : 1.2M LED T8 Glass tube

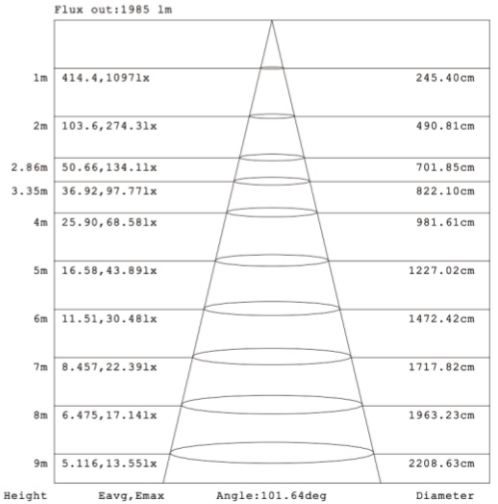
Model: LT-I1210-G-FF

Product Spec: 10W PF>0.9 CRI70

Flicker-Free 190LM/W



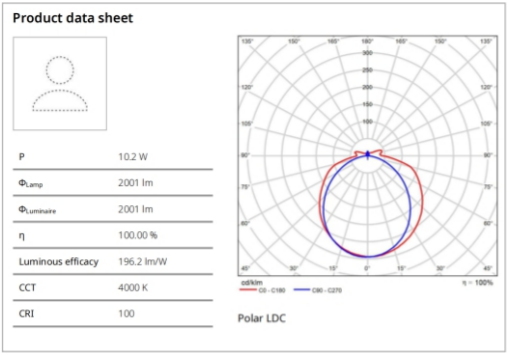


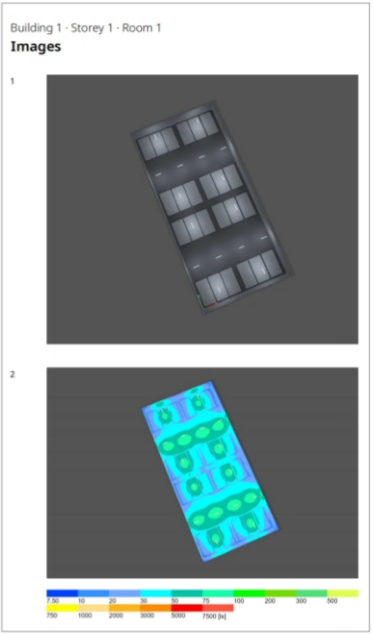


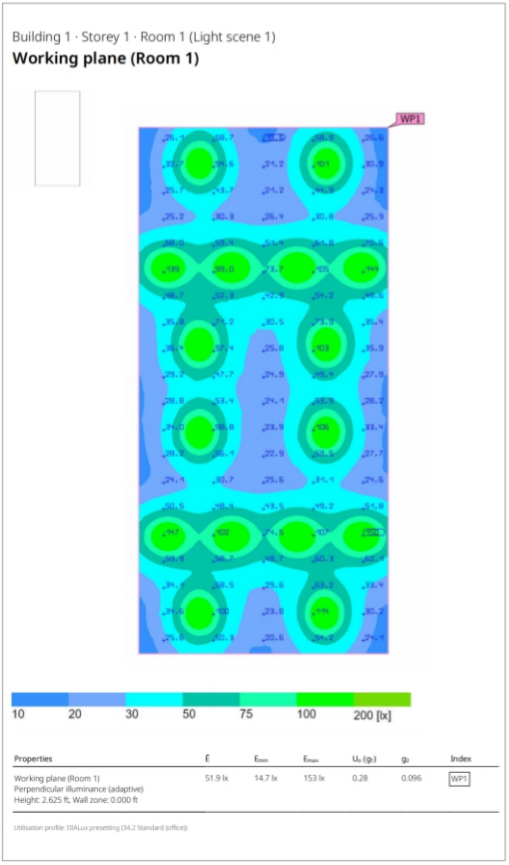
Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

停車場照明模擬(範例)

A Carpark Lighting DIALux Simulation (Example)







照明模擬可做:
Lighting simulation can do:

* 根據尺寸圖,有設定的照度要求,可以配置相應的產品並模擬得到安裝數據;

* 有尺寸圖及選定好了產品,可以配置安裝的位置數量以及照度的數據;

* 提供到安裝位置尺寸及數量,可以配置照明產品的功率及照度數據;

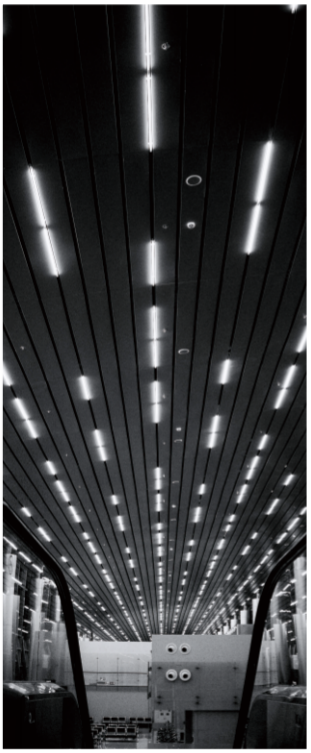
* Based on the dimensional drawings and the set illumination requirements, we can configure the corresponding products and simulate the installation data.

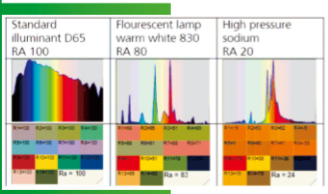
* With the dimensional drawings and selected products, we can configure the number of installation locations and illumination data.

* With the dimensions and number of installation locations, we can configure the lighting product's power and illumination data.

Lighting Knowledge

照明常用知識

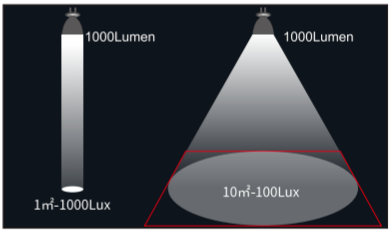




Lumen 流明

Lumen 實際上是代表著光的強度，也就是光通量(Luminous flux)即指光源在某單位時間內所發出之光線總數量。一般稱作光束的單位，簡而言之，流明就是光束照在物體表面的量。如何為不同商業場景（如零售、辦公室、倉庫）選擇合適的光通量。

Lumen actually represents the intensity of lights. that is, the luminous flux(Luminous Flux) refers to the unit of the total amount of light emitted by alight source in a unit time, generally referred to as the light beam. In short, lumens is the light beam Amount on the surface of the object.How to choose the right luminous flux for different commercial scenarios (such as retail, office, warehouse).



High color rendering and low color tolerance
高顯色度 · 低色容差

顯色度以Ra來表示，天然光的顯色度為100Ra，顯色度越接近100Ra，我們看到的顏色就越接近物體自然原色。

Color rendering is represented by Ra, the color rendering of natural light Is 100 Ra, the closer the color rendering is to100 Ra, the color we see The closer the color is to the natural primary color of the object.

2700K CRI 97	2700K CRI 90	2700K CRI 80	2700K CRI 70

Low color tolerance SDCM <3

Color Temperature　色溫

色溫以 K(kelvin)為單位,不同色溫適配不同環境:

3000K 以下為暖黃光,顯溫暖舒適,營造氛圍;

5000K 以上為藍光(白光),顯清冷寧靜,提升活力;

亞熱帶人偏好 4000K 以上冷光,寒帶族群偏好 4000K 以下暖光。

Color temperature is measured in kelvins (K), and different color temperatures are suitable for different environments:

Light below 3000K is warm yellow, creating a warm and comfortable atmosphere;

Light above 5000K is blue (white), creating a cool and tranquil atmosphere that enhances vitality;

People in subtropical climates prefer cool light above 4000K, while those in cold climates prefer warm light below 4000K.

WB SETTINGS	COLOR TEMPETATURE	LIGHT SOURCES
	10000-15000K	Clear Blue Sky
	6500-8000K	Cloudy Sky / Shade
	6000-7000K	Noon Sunlight
	5500-6500K	Average Daylight
	5000-5500K	Electronic Flash
	4000-5000K	Fluorescent Light
	3000-4000K	Early AM/ Late PM
	2500-3000K	Domestic Lightning
	1000-2000K	Candle Flame

Product life　產品壽命

燈具壽命分平均壽命與經濟壽命(皆以小時為單位),另有 LB 值衡量光效:

平均壽命:100 個燈具同時點亮,第 50 個損壞時的時長(如 6000 小時);

經濟壽命:50% 燈具失效時,仍維持 70% 以上光源,且光通維持率達標;

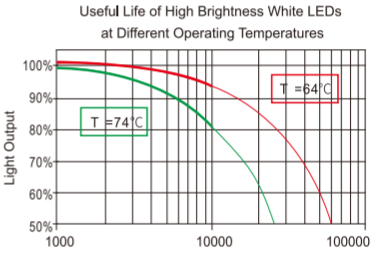
LB 值:L 為初始流明百分比,B 為故障資料。例:50000 小時 L90B10 指 90% 光通量、10% 不達標;L70B50 指 70% 光通量、50% 不達標,品質排序 L90B10＞L80B10＞L70B50。

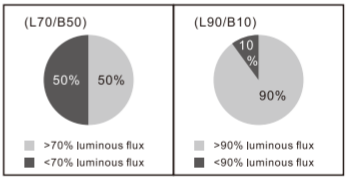
Lamp lifespan is divided into average lifespan and economic lifespan (both measured in hours). Luminous efficiency is also measured using the LB value:

Average lifespan: The time it takes for the 50th lamp to fail out of a group of 100 lamps (e.g., 6,000 hours).

Economic lifespan: The time it takes for the luminous flux to remain above 70% and meet lumen maintenance standards even after 50% of the lamps have failed.

LB value: L represents the initial lumen percentage, and B represents the failure data. For example, at 50,000 hours, L90B10 means 90% luminous flux, with 10% failing; L70B50 means 70% luminous flux, with 50% failing. The quality ranking is L90B10 > L80B10 > L70B50.





Power Factor　功率因數

功率因數(PF)是負載有功功率與視在功率的比值:純電阻負載 PF=1,含電感 / 電容的負載 PF<1。PF 能反映發電機容量利用率,是合理用電指標,對設備利用率、電能消耗分析很重要;電力公司通常對低 PF 工商業用戶以高電費費率計費。

Power factor (PF) is the ratio of the load's active power to its apparent power: a purely resistive load has a PF of 1, while a load containing inductance or capacitance has a PF of <1. PF reflects generator capacity utilization and is an indicator of optimal electricity use, crucial for analyzing equipment utilization and energy consumption. Utility companies typically charge higher rates to commercial and industrial users with low PF.

Minium Allowable Power Factor For LED Lamp With Integrated Driver

Rated Lamp Wattage(LW)	minimum allowable power factor
LW ≤ 5W	0.5
5W < LW ≤ 25W	0.7
LW > 25W	0.9

information refer to Hong Kong Voluntary Energy Efficiency Labelling for LED lamp-January 2017 EMSD (Electrical and Mechanical Services Department)

Stroboscopic Suppression　頻閃抑制

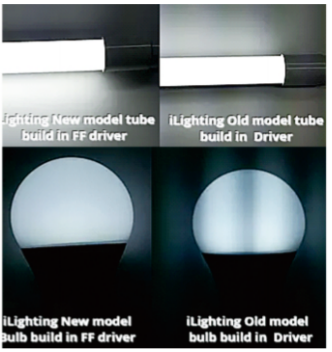
理想的光源亮度是鎮流後之直流電壓恆定不變的，這就是理論上的絕對無頻閃。實際上我們平常使用的燈具直流電壓都不會真正的恆定不變，週期的亮度高低變化程度就是頻率。

頻閃頻率越高對人的影響越小，頻閃深度越小對人的影響越小，總體來說頻閃深度越小對人降低或消除導致視力疲勞的低頻率光，減輕眼睛負擔，關愛眼睛。

Ideal light source brightness is constant, which is absolute no stroboscopic depth. In fact, the brightness of the lamps we usually install will not be truly stable. The degree of change in the brightness within the period is the frequency.

The higher the strobe frequency , the smaller the impact is on peoples. As a consulsion, the lower the stroboscopic depth can reduce or eliminate low-frequency light vision fatigue that reduces the burden on the eyes and cares about eye health.

無頻閃 = Flicker Free



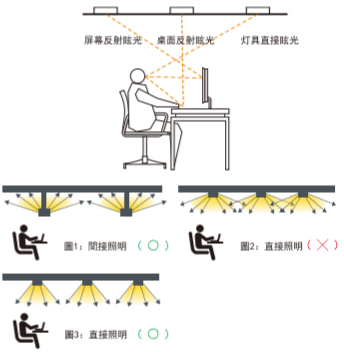
Glare　眩光

是指視野中由於不適宜亮度分佈，是因視野內的亮度大幅超過眼睛所適應，以致引起視覺不舒適和降低物體可見度的視覺條件。視野內產生人眼無法適應之光亮感覺，可能引起厭惡、煩擾、不舒服或視力受損不舒服、甚或喪失明視度。在視野中某一局部地方出現過高的亮度或前後發生過大的亮度變化。

眩光是引起視覺疲勞的重要原因之一 。優良的防眩光設計能提升員工舒適度與工作效率，減少視覺疲勞。

Refers to the unsuitable brightness distribution in the visual field, resulting in visual discomfort and reduced object visibility Visual conditions. There is a discomfort feeling in the eye vision that a person cannot withstand that would cause disgust, discomfort or even loss of vision. Excessive brightness in a special location of vision, or excessive brightness changes.

Glare is one of the important causes of visual fatigue.Excellent anti-glare design can improve employee comfort and work efficiency and reduce visual fatigue.



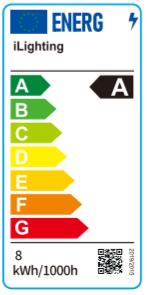
Light source efficiency lm/w (lumen efficiency)
光源效率 lm/w（流明效率）

光源的效率取決於其所發出的光的流明除以起耗電量所得值LED光亮度，並非似功耗(W)度量，而是以流明輸出(lm)來決定。

iLighting LED 流明效益高，燈管光源效率最高 210lm/W，更有最新歐洲 A 級能源標籤，保證節電環保。

The efficiency of a light source depends on the lumen of the light it emits divided by the power consumption LED brightness is not similar to wattage (W) measurement, but measured in lumens output (lm) Decide.

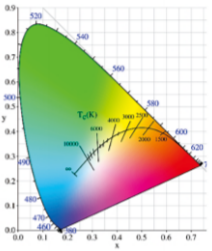
iLighting LED has high lumen efficiency, with the lamp light source efficiency reaching up to 210lm/W. It also has the latest European Class A energy label, ensuring energy conservation and environmental protection.



LED International standard for chromaticity difference
LED 光源色度差異之國際標準

Chromaticity Tolerances
Quadrangles
— In both ΔCCT and Duv directions
— Approximately equal to 7-step MacAdam ellipses

Nominal CCT	Target CCT and tolerance(K)			Target DUV and tolerance(K)		
2700k	2725	±	145	0.000	±	0.006
3000k	3045	±	175	0.000	±	0.006
3500k	3465	±	245	0.000	±	0.006
4000k	3985	±	275	0.001	±	0.006
4500k	4503	±	243	0.001	±	0.006
5000k	5026	±	283	0.002	±	0.006
5700k	5665	±	355	0.002	±	0.006
6500k	6530	±	510	0.003	±	0.006
Flesible CCT(2700-6500k)	T^{P}	±	△T^{P}	D_{uv}	±	0.006

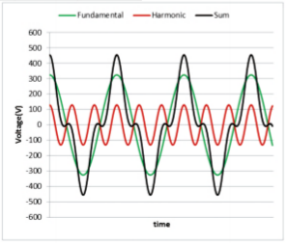


The LED lamp must have one of the rated Correlated Colour Temperatures (CCTS) including 2700K,3000K,3500K,4000K,4500K,5000K,5700K,6500K and flexible CCT consistent with the 7-step chromaticity, quadrangles and Duv tolerances as indicated in Table1.The measured initial CCT and initial DUV shall be within the tolerances of target CCT and target DUV of the selected rated CCT.

Total Harmonic Disrtortion (THD)　總諧波失真

THD 是驅動電路中的各種非線性元器件工作時產生的倍數於電源頻率(50-60HZ)的周期性電流電壓干擾,經驅動電路的輸入端反竄入電網迴路中,造成電網的工作頻率不純淨(如 50HZ電網中夾雜著 100HZ、150HZ、200HZ等等的多種雜波電流),影響其它附近的用電設備,嚴重的會竄到總電網中乾擾損壞電力設備。

例如:各種精密儀器設備、生命維持設備就對使用的電源品質要求很高,如果使用了諧波大的電網或附近有高諧波的用電設備造成電網諧波過高,輕則會干擾儀器的精度,重則可能會導致儀器工作不正常甚至不工作、燒毀等……



THD's dimming application scheme is the periodic current and voltage interference that multiples of the power supply frequency (50-60HZ) is generated during the operation of various non-linear components in the drive circuit, and then back into the grid circuit through the input of the drive circuit. Causes the impure working frequency of the power grid (for example, a variety of clutter currents of 100HZ, 150HZ, 200HZ, etc. are mixed in the 50HZ power grid), affects other nearby electrical equipment, and can seriously damage the power equipment by channeling into the overall power grid.

For example: various precision instruments and life support equipment have high requirements on the quality of the power supply used. If the network harmonic is too high, it will interfere with the accuracy of the instrument in the light, and it may cause the instrument to work abnormally or even not work, burn out, etc ...

Lux　平均照度

平均照度應用要求照度的定義為被照體單位面積所受的光通量，其單位為勒克斯(LUX)，每一不同使用目的的場所，均有其合適的照度來配合實際需要。例如，一般家庭書房的全般照明照度約為 100 LUX，閱讀時則需要照度 600 LUX，此時可用檯燈作為局部照明，以達到所需照度。照度太低時，容易導致眼睛疲勞造成近視，照度太高則過分明亮刺眼，形成電力浪費。

Lux is defined as the average luminous flux per unit area of the subject, and its unit is lux. Every place with different usage purpose has its own suitable illumination to meet the actual needs. For example, the general illumination of an ordinary home study is about 100 LUX, while reading requires 600 LUX. At this time, a table lamp can be used as local lighting to achieve the required illuminance. When the illuminance is too low, it is easy to cause eye fatigue and myopia, and when the illuminance is too high, it is too bright and dazzling, resulting in waste of electricity.

照度 (LUX)	場所 辦公場所
1500~750	製圖室、設計室、辦公室
750~300	辦公室、電腦室、會議室
300~100	廁所、走廊、樓梯、休息室、其他場所
75~30	太平梯

照度 (LUX)	場所 工廠
3000~1500	組裝作業、檢查、測試、分析、超細微作業、檢查
1500~750	組裝作業、檢查、測試分析、細微作業
750~300	組裝作業、檢查、測試分析、普通作業
300~150	包裝、倉庫

照度 (LUX)	場所 學校
1500~300	精密製圖、精密實驗、圖書館
750~200	教室、圖書館閱覽室、教職員工休息室、體育館
300~75	演講大廳/禮堂、衣物間、走廊、樓梯、休息室
75~30	倉庫、安全梯
10~2	通道（夜間使用）

Tube length and size specifications　管堵頭針腳的尺寸規格