



滿坤電子有限公司

ManKun Electronic Co., Ltd.

LED Professional Lighting Program provider

Brief introduction

Guangzhou Mankun Electronic Co.,Ltd is a high-tech joint management enterprise.It specialized in research&development and also specialized in production for rigid printed circuit board and the flexible printed circuit board. The company was established on August 28th,2005.It had been devoted technology innovation to provide the most satisfied and quality service. It has modernized standard workshop reaches nearly 3,000 square meters for production and more than 100 employees.



Factory building



Product display room



Production workshop



Machinery equipment

Lighting design & elite team & lead the trend



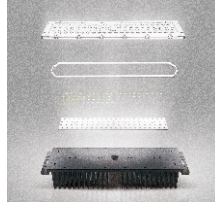
13 years of professional hardware development, Constantly innovating and making First-class PCB products.



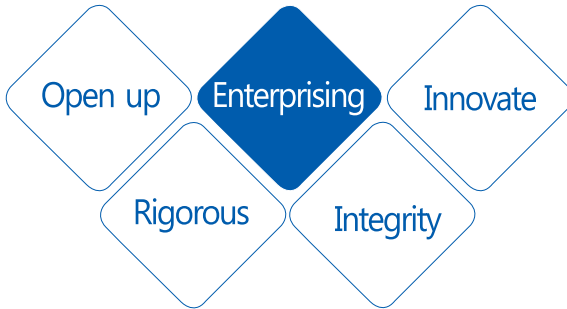
With customer IDEA and customer experience as the starting point, we can provide professional customizing service for customers and enjoy high standard and efficiency service of hardware..



More than 20 imported fully automatic production equipment from Japan, Taiwan and other places.It can greatly guarantee the production efficiency and excellent quality.



The high strength circuit with fine material selection, high heat dissipation and high density has small volume, good heat dissipation effect and good insulation and mechanical properties..



Highly active • Craftsman • Profession

Corporate Culture: Innovation quality, High efficiency, Create excellence service, Innovation future.

Goal: to create a world-class brand of products and services.

Purpose: create value for customers, provide opportunities for employees and create benefits for the company.

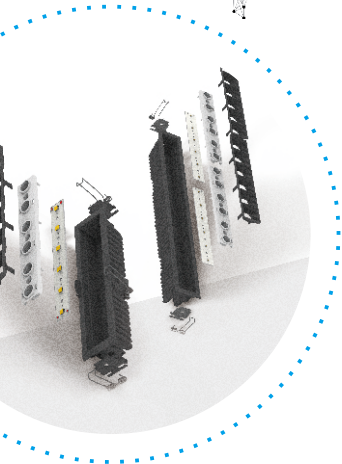
Strategy: to produce the most needed products to meet the diversified needs of customers.

Service concept: Create quality Service and pursue customer satisfaction.

Overview & Technology

Mankun Electronics Co., Ltd. is a global leader in LED Professional Lighting Program Provider.

With 13 years' PCB manufacturer experience , Mankun professional technical team is constantly improving the PCB technical level and production capacity .As a PCB vendor , we are not only provide one-stop service including PCB design , PCB manufacturer , PCB assembly service , but also with the difference resource integration and innovation, it had laid a foundation for the whole completed led lighting scheme. on the premise of good quality , We have a great advantage in quick delivery date and competitive price.



Development and Design of LED Lighting Scheme

Assembly test production LED PCB

SKD parts distribution

ManKun aspires to create new technologies and innovative products that inspire the world,while delivering new value to enhance the lives of customers, partners and employees.

Honorary qualification
Partial patent demonstration



Certificate & Honor

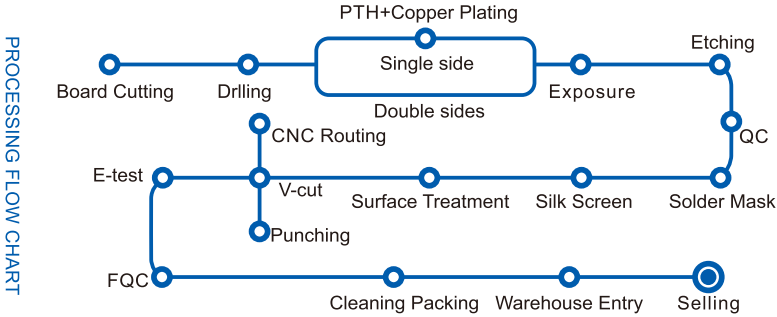
Mankun Strive to continuous innovation of quality products and services to the society.



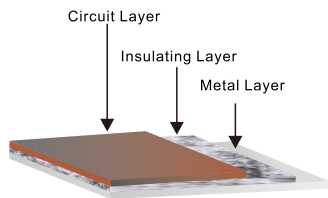
Mankun company takes the "quality and service priority" as our mission, All of our products can conform ISO9001 quality system,Which are also windey exported to America,Europe,Russia, Singapore,South Korea and other countries and regions. The products are widely used in the field of computer,communications,aerospace,automovive, power supply,LED lighting and general consumerel-ectronics products such as products certified by UL to comply with EU ROHSrequirements, performance of the IPC,MIL standards .



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ITEM	SPECIFICATION
Surface	LF HASL,immersion gold,immersion silver,OSP
Layer	Single side,double sided Multilayer and special structure
Maximum PCB size	240mmx1490mm OR 490x1190mm
PCB thickness	0.4-3.0mm
Copper Foil thickness	H 1/2/3/4(oz)
Insulation layer thickness	50/75/100/125/150/175/200(um)
Metal Material	Aluminum(1100/3003/5052/6061), Copper Aluminum/FR4/CEM-1/CEM-3
Metal Base thickness	0.5/0.8/1.0/1.2/1.6/2.0/3.2/5.0(mm)
Shaping	Die punching/CNC Route/V-Cut
Test	100% open&short test
Shaping tolerance	Die Punching<±0.05mm,CNC Route<±0.15mm, V-CUT Thick residue>0.15mm
Hole tolerance	± 0.05mm
Min.Hole Diameter	Single side 0.5/Double sided PTH0.3MM
Solder mask	green/white/black/red/yellow
Min.letter height	0.8mm
Min.line space	0.15
Min.letter width	0.15
Silk screen color	blue/white/black/red/yellow
Special hole	Spot facing/cup hole/buried via hole/buried tank
File format	Gerber,Protel,PowerPCB,AutoCAD etc



Circuit Layer-Copper foil of the gel-treatment.

Dielectric Layer-Fberglass support & Unsupport.

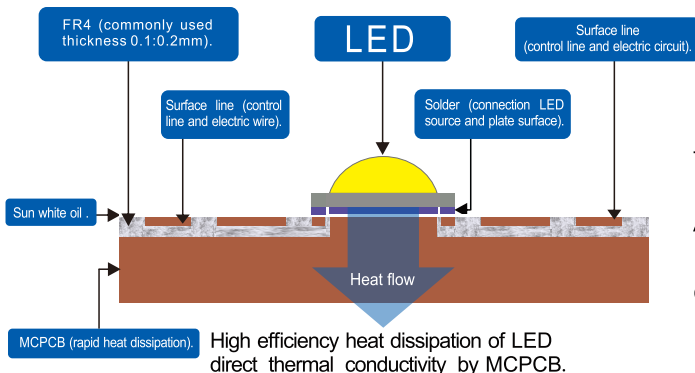
Metal Substrate-Aluminum, Ferrum, Stainless steel, Copper, etc.

■ Numerical table of heat conductivity of metal substrate 金屬基板熱傳導率數值表

Product name 品名	Power substrate 電源基板	Power conversion 功率變頻				LED Lighting / car Lighting LED 照明 / 車載照明	
Insulation type 絕緣層種類	Low dielectric 低介電		High heat dissipation 高散熱			hypoelasticity 低彈性	
Insulation thickness 絕緣層厚度 (μm)	80	125	125	125	80	100	
Copper foil thickness 銅箔厚度 (μm)	35	70	70	70	70	70	
peel strength 剝離強度 (N/cm)	18	20	21	20	20	13	
Interspace voltage resistance 一分間耐電壓 (kv)	2	5	4.5	4	2	2.5	
Insulation failure voltage 絕緣破壞電壓 (kv)	5	7	6	6	4	6	
Volume resistance 體積電阻 (Ω·cm)	5X10 ¹⁵		4X10 ¹⁵			5X10 ¹⁵	
Dielectric constant 介電常數	1MHZ	4.5	4.6	7.2	7.8	7.8	4.3
Thermal resistance 熱阻 (°C/W)	NSK method NSK方法	0.5	0.65	0.55	0.35	0.25	0.5
Thermal conductivity 熱傳導率 (W/mk)	*1	1	1.5	2.0	3.0	112	3.0
Solder heat resistance 焊料耐熱性	300°C	>10 points (分)				>2 points (分)	
Glass transition point 玻璃轉化點 (°C)	*2:DSC *3:DMS	160*2	170*2	155*2	155*2	155*2	60*3

*根據 ASTM E 1530標準 ■ 以上數值是測試相對值、並非絕對值

Direct thermal conductivity MCPCB.

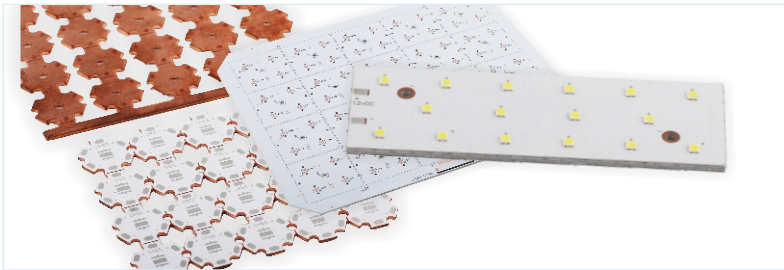


Thermal conductivity:

Aluminum: **230**W/mk

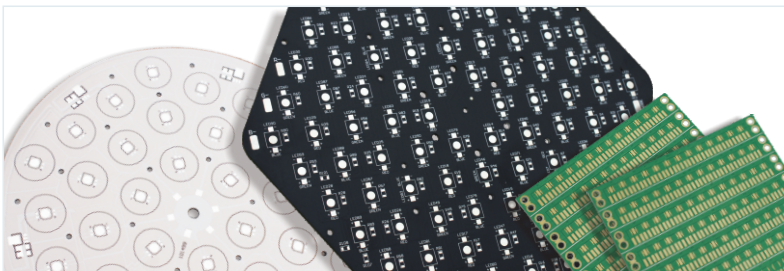
Copper: **430**W/mk

High efficiency heat dissipation of LED direct thermal conductivity by MCPCB.



■ Direct thermal conductivity MCPCB

As a new type of solid state tube, thermoelectric separation copper substrate has the key points of satisfying high power heat dissipation, prolonging service life and protecting environment, etc. The solder joints of the high thermal conductivity substrates spread so quickly that a more powerful soldering iron is needed for the perfect soldering. Good thermal conductivity.



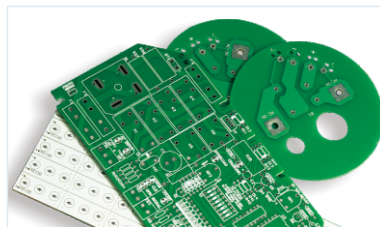
■ Metal Core PCB

Using Surface-mount Technology(SMT). Effective treatment thermal diffusion in the circuit design, reduce product operation temperature. Improve the power density and reliability of products. Prolong the life of the product and good mechanical durability.



■ FPC

Free bending, folding winding, movable and expansion lightweight. To realize miniaturization and thin. The components installations and wires connection integration.



■ FR-4/CEM-1/CEM-3

With high mechanical and dielectric properties. Good heat resistance.



Main Applications:



architectural lighting



Film and TV lighting



Commercial lighting



Medical lighting



Landscape lighting



Automobile lighting



Flashlight lighting



Street lighting



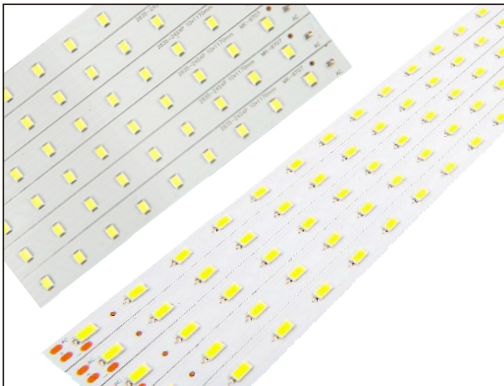
Landscape lighting

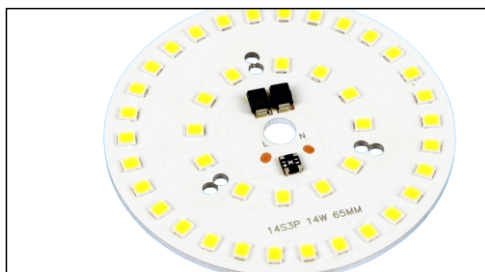


Architectural lighting

Product characteristics

- High thermal conductivity of copper substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products:
Skylights, Lighting, Courtyard Lamps, Landscape Lamps, Industrial and Mining Lamps, Illumination Lamps, Wall Wash Lamps, etc. Architectural and outdoor lighting.
- Applicable place:
Hotel wineshop, shopping plaza, exhibition center, parking lot, stadium, tennis playground, gymnasias, billboard, statue, courtyard, lighting engineering project, public passage, and other indoor and outdoor applications.

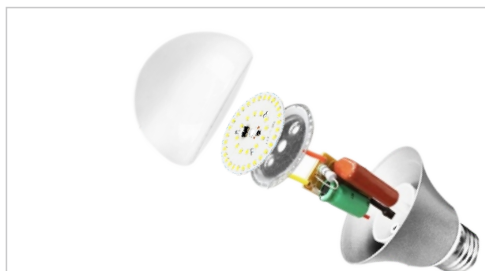




Commercial lighting



Indoor lighting



Product characteristics

- High thermal conductivity of aluminum substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products: Indoor lighting such as bulb lamp, sky lamp, downlight, panel lamp, etc.
- Applicable place: Shopping center, office building, hotel, exhibition hall, exhibition hall, conference hall, hospital, show window, house lighting application, especially for the luxury standard application.





Film and TV
lighting



Scenic
lighting



Product characteristics

- High thermal conductivity of copper substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products:
Film and TV spotlight, shooting lamp, track lamp, patio lamp, industrial lamp, cast lamp, wall wash lamp, etc.
- Applicable place:
Stage, bar, KTV, shopping mall, banquet, etc. Decorative lighting or emotional lighting.





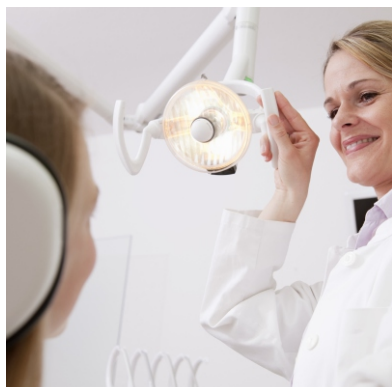
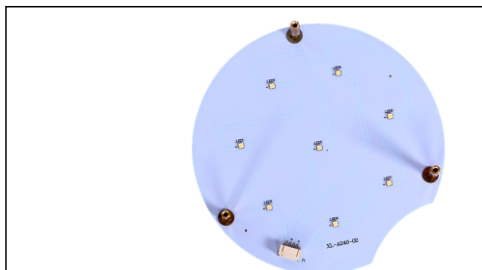
Medical lighting

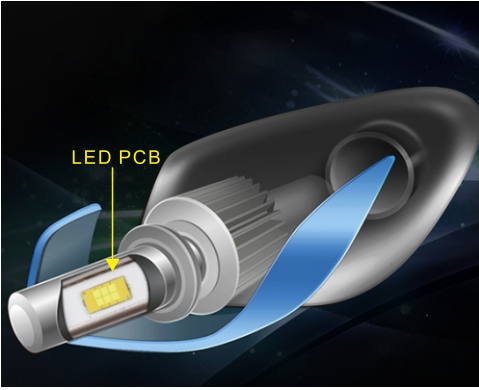


Operation lighting

Product characteristics

- High thermal conductivity of aluminum substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products: Medical lighting such as cold light, shadow lamp, inspection lamp, operation lamp, reflective light, etc.
- Applicable place: Medical device, medical examination and other operation lighting.



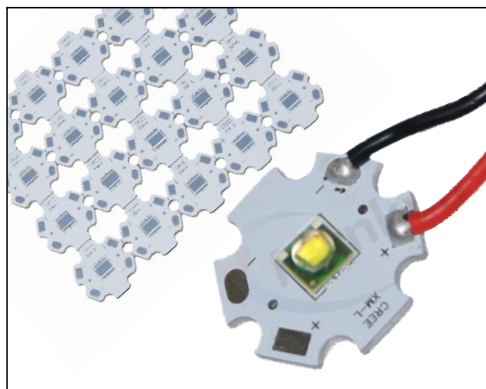


Automobile lighting

Product characteristics

- High thermal conductivity of aluminum substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products:
Car headlights, distant lights, angel eyes, etc.
- Applicable place:
BMW, Audi and other well-known popular brand series.





Flashlight lighting



Headlamp lighting

Product characteristics

- High thermal conductivity of aluminum substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products:
A strong light, a flashlight, a police flashlight, a light headlight etc.
- Applicable place:
Multi-purpose lighting, suitable for camping, hunting, portable outdoor lighting good night helper.





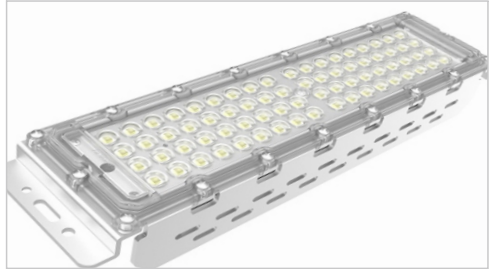
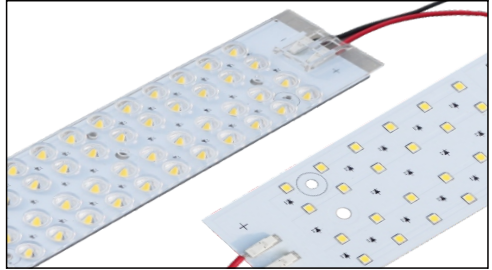
Street lighting



Tunnel lighting

Product characteristics

- High thermal conductivity of copper substrate
- Certificate: Raw materials and final PCB are all fully accord with UL standard.
- Applicable products: Street lamp, tunnel lamp, advertisement lamp, high shed lamp, shooting lamp and so on outdoor lighting.
- Applicable place: Easy arrangement to support kilowatt lighting, suitable for public lights, railways, subways, tunnels, and Lighting of other underground passages, workshops, large warehouses, stadiums and all kinds of factories, engineering, Construction sites such as large areas of floodlighting, can also be used in urban landscape, billboards, buildings lighting for night scenes such as facades, easy to carry, convenient to replace.






For further technical informations please visit our website: www.mankun.net



With their modular construction, easy-to-use connections and optimal color consistency, Mankun's linear module line-ups are well-suited for a wide variety of luminaires.

- Tight color binning for best color consistency and high uniformity
- Modular design flexibility makes a wide variety of luminaire designs possible
- Better uniformity & cost effective

Product	Key Features
	<p>Linear module</p> <ul style="list-style-type: none"> • Flexible design choices • High efficiency of up to 182 lm/W • High color rendering (CRI >80 and >90), T_p 50°C • Choice of color temperatures (3000 K, 4000 K, 5000 K)
	<p>Linear module</p> <ul style="list-style-type: none"> • High voltage solution • High efficiency of up to 148 lm/W • High color rendering: CRI >80, T_p 50°C • Variation of color temperatures (3000 K, 4000 K, 5000 K)
	<p>Rectangular module</p> <ul style="list-style-type: none"> • High lm/W for high ceiling/height applications • High efficiency of up to 169 lm/W • High color rendering: CRI >80, T_p 50°C • Choice of color temperatures (3000 K, 4000 K, 5000 K)

Linear modules



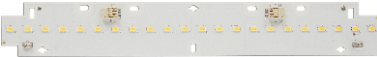
L560W20E32



L560W20E48



L560W40E44



L280W40E22

Product	Luminous Flux (lm)	Power Consumption (W)	Input Voltage (V)	IF (mA)	I _{max} (mA)	Efficacy (lm/W)	CRI	CCT (K)	Beam Angle (°)	Size (mm)	Temperature Range (°C)	Life time (hrs)
L560W20E32	2105	14.9	24.8	600	720	141	80+	3000	115	560x20x5.8	-20--+50	50000
	2140					144		3500				
	2200					148		4000				
	2200					148		5000				
L560W20E48	2535	16.8	24.0	700	1080	151	80+	3000	115	560x20x5.8	-20--+50	50000
	2575					153		3500				
	2655					158		4000				
	2655					158		5000				
L560W40E44	1840	9.9	21.9	450	900	187	80+	3000	115	560x40x5.8	-20--+50	50000
	1950					198		3500				
	2000					203		4000				
	2050					208		5000				
L280W40E22	920	4.9	10.9	450	900	187	80+	3000	115	280x40x5.8	-20--+50	50000
	975					198		3500				
	1000					203		4000				
	1025					208		5000				

Rectangular modules



L565W55E66

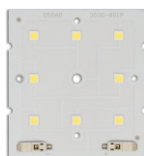


L280W55E33

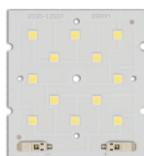
Product	Luminous Flux (lm)	Power Consumption (W)	Input Voltage (V)	IF (mA)	I _{max} (mA)	Efficacy (lm/W)	CRI	CCT (K)	Beam Angle (°)	Size (mm)	Temperature Range (°C)	Life time (hrs)
L565W55E66	3040	18.8	64.6	290	540	162	80+	3000	115	560x55x5.8	-20--+50	50000
	3180					169		4000				
	3270					174		5000				
	3180					169		6500				
L280W55E33	1520	9.4	32.3	290	540	162	80+	3000	115	280x55x5.8	-20--+50	50000
	1590					169		4000				
	1635					174		5000				
	1590					169		6500				

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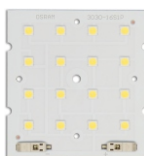
Industrial modules



L54W58E8



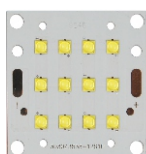
L54W58E12



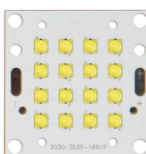
L54W58E16

Product	Luminous Flux (lm)	Power Consumption (W)	Input Voltage (V)	IF (mA)	I _{max} (mA)	Efficacy (lm/W)	CRI	CCT (K)	Beam Angle (°)	Size (mm)	Temperature Range (°C)	Life time (hrs)
L56W58E8	936	7.2	48	150	200	130	80+	3000	115	54x58x5.8	-20→+50	50000
	972					135		3500				
	993					138		4000				
	1008					140		5000				
L54W58E12	1404	10.8	72	150	200	130	80+	3000	115	54x58x5.8	-20→+50	50000
	1458					135		3500				
	1490					138		4000				
	1512					140		5000				
L54W58E16	1872	14.4	96	150	200	130	80+	3000	115	54x58x5.8	-20→+50	50000
	1944					135		3500				
	1987					138		4000				
	2016					140		5000				

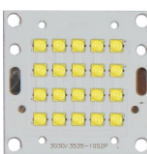
Square modules



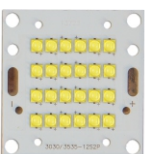
L40W40E12



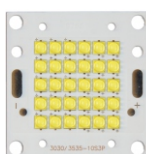
L40W40E16



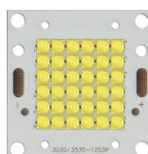
L40W40E20



L40W40E24



L40W40E30



L40W40E36




Model	Connector	Luminous Flux (lm)	Power Consumption (W)	Input Voltage (V)	IF (mA)	I _{max} (mA)	Efficacy (lm/W)	CRI	CCT (K)	Beam Angle (°)	Size (mm)	Temperature Range (Operation, °C)	Life time (hrs)
L40W40E12	Poke-in	3503	24.5	35	700	1000	143	70+	3000	115	40x40x5.0	+20→+95	50000
		3797					155		4000				
		3797					155		5000				
L40W40E16	Poke-in	4680	32.7	46.7	700	1000	143	70+	3000	115	40x40x5.0	+20→+95	50000
		5060					155		4000				
		5060					155		5000				
L40W40E20	Poke-in	5848	40.9	29.2	1400	2000	143	70+	3000	115	40x40x5.0	+20→+95	50000
		6339					155		4000				
		6339					155		5000				
L40W40E24	Poke-in	7007	49	35	1400	2000	143	70+	3000	115	40x40x5.0	+20→+95	50000
		7595					155		4000				
		7595					155		5000				
L40W40E30	Poke-in	8766	61.3	29.2	2100	3000	143	70+	3000	115	40x40x5.0	+20→+95	50000
		9502					155		4000				
		9502					155		5000				
L40W40E36	Poke-in	10520	73.5	29.2	2100	3000	143	70+	3000	115	40x40x5.0	+20→+95	50000
		11392					155		4000				
		11392					155		5000				

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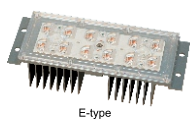


Easy-to-use modular design with various lumen packages combined with IP66-certified durability, makes it the smart choice for use in the harshest of environments

- Wide range of engine combinations well-suited for a variety of harsh environment applications
- High luminous efficacy
- Available with a full range of compatible drivers

Product	Key Features	
	Modular Platform T-type	<ul style="list-style-type: none">• Total solution integrating LED+Optics+Thermal• With LH173, higher lumen density of 2650lm• IP66
	Optical modules	<ul style="list-style-type: none">• Total solution integrating LED+Optics+Thermal• High efficiency at module• Suitable for flood and highbay lighting• Robust design with waterproof durability
	Rectangular module	<ul style="list-style-type: none">• Greater design flexibility for various fixture designs• High efficiency of up to 132 lm/W• High color rendering: CRI >80, Tp 50°C• Choice of color temperatures (3000 K, 4000 K, 5000 K)

Modular Platform Engine



E-type



F-type

Model	Light Distribution	Heat Sink	Connector	Luminous Flux (lm)	Power Consumption (W)	Input Voltage (V)	IF (mA)	Imax (mA)	Efficacy (lm/W)	CRI	CCT (K)	Weight (g)	Waterproof/Dustproof Grade	Temperature Range (Operation, Tc)
E-type	Type2 Short	Fin	Connector	2760	25	36	700	1000	100.0	80+	3000	240	IP66	-30~+80
				3180					114.3		5000			
F-type	Type2 Medium	-	Wire	2880	25	36	700	1000	100.0	70+	3000	180	IP66	+10~+90
	4000										3000			
	3000										4000			
	Beam angle 85										4000			

* E-type: with fin (thermal management by engine), F-type: without fin (thermal management by fixture), T-type: flange with fin (H/S with Tetra screw-holes)

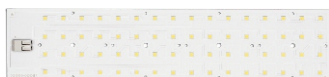
Rectangular modules



L223W49E16



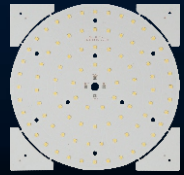
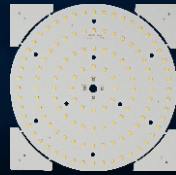
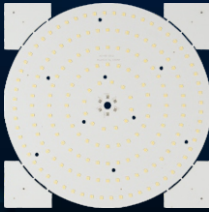
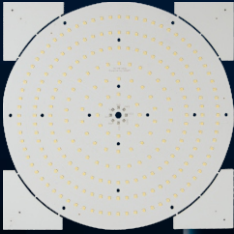
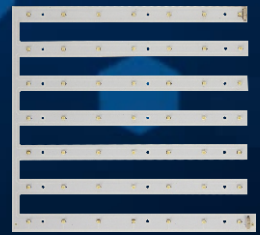
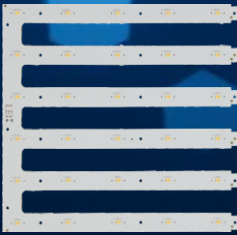
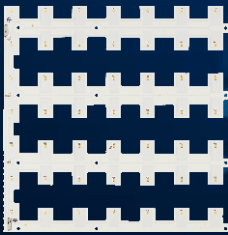
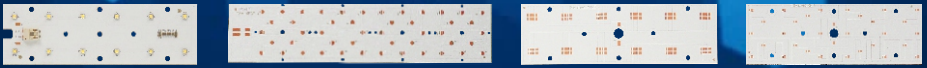
L220W50E48



L220W50E64

Model	Connector	Luminous Flux (lm)	Power Consumption (W)	Input Voltage (V)	IF (mA)	Imax (mA)	Efficacy (lm/W)	CRI	CCT (K)	Beam Angle (°)	Size (mm)	Temperature Range (Operation, °C)	Life time (hrs)
L223W49E16	Poke-in	4680	32.7	23.4	1400	2000	143	70+	3000	115	223x49x5.8	+20~+95	50000
		5060					155		4000				
		5060					155		5000				
L220W50E48	Poke-in	1507	9.6	18	500	700	157	80+	3000	115	220x50x5.8	+20~+95	50000
		1555					162		4000				
		1650					172		5000				
L220W50E64	Poke-in	2009	12.8	24	500	700	157	80+	3000	115	220x50x5.8	+20~+95	50000
		2073					162		4000				
		2200					172		5000				

Product display



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