

The Smartest Solution Thinking of Environment



DISTRIBUTORE ESCLUSIVO ITALIA



OK LED

INDUSTRY INC. www.okinc.co.kr





LED

Powered by
SAMSUNG LED Chip

The Smartest Solution
Thinking of Environment



Ability, Best Quality, Confidence.

OK INDUSTRY Inc. always keeps customer's satisfaction. What comes first is conviction under the ability, best quality and confidence. As the customer's satisfaction has led to continue growth in our company. We always value our customer's opinion to reach their satisfaction to make the best products. Through this, we'll be able to aim the company's goal. in return of favor, we would like to give reward for the customer's benefit by giving best product and different services.

DC WHITE SERIES

Input Voltage	12 V
Operating Current	0.06 A
Power Consumption	0.72 W
Dimensions	53.4(L)x13(W)x6.9(H)mm
LED Interval	29.3 mm
LED Module Interval	50mm
View Angle	120°
Color Temperature	About 10,000 Kelvin
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	100(Small Box)/1000(Large Box) Ctn

OK LED-W201



Input Voltage	12 V
Operating Current	0.06 A
Power Consumption	0.72 W
Dimensions	84.5(L) x 14.2(W) x 7.6(H)mm
LED Interval	29.3 mm
LED Module Interval	80mm
View Angle	120°
Color Temperature	About 10,000 Kelvin
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	100(Small Box)/1000(Large Box) Ctn

OK LED-W301



Input Voltage	12 V
Operating Current	0.12A
Power Consumption	1.44W
Dimensions	45(L)x45(w)x 7.1(H)mm
LED Interval	29.3 mm
LED Module Interval	28 mm
View Angle	120°
Color Temperature	About 10,000 Kelvin
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	50(Small Box)/500(Large Box) Ctn

OK LED-W401



Input Voltage	12 V
Operating Current	0.12A
Power Consumption	1.44W
Dimensions	45(L)x45(w)x 7.1(H)mm
LED Interval	28 mm
LED Module Interval	80 mm
View Angle	120°
Color Temperature	About 10,000 Kelvin
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	50(Small Box)/500(Large Box) Ctn

OK LED-W501



DC COLOR 2 SERIES



Input Voltage	12 V
Operating Current	0.04A
Power Consumption	0.48W
Dimensions	53.4(L)x13(W)x6.9(H)mm
LED Interval	29.3mm
LED Module Interval	50 mm
View Angle	120°
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	100(Small Box)/1000(Large Box) Ctn

OK LED-R201



OK LED-G201



OK LED-B201



DC COLOR 3 SERIES



Input Voltage	12 V
Operating Current	0.04A
Power Consumption	0.48W
Dimensions	84.5(L) x 14.2(W) x 7.6(H)mm
LED Interval	29.3mm
LED Module Interval	80 mm
View Angle	120°
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	100(Small Box)/1000(Large Box) Ctn

OK LED-R301



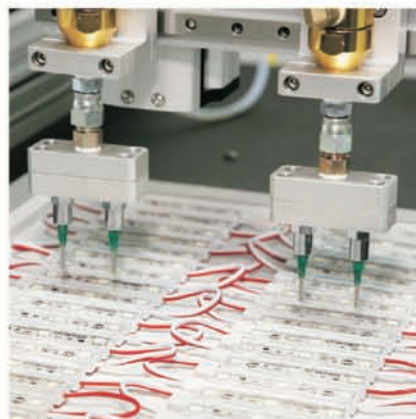
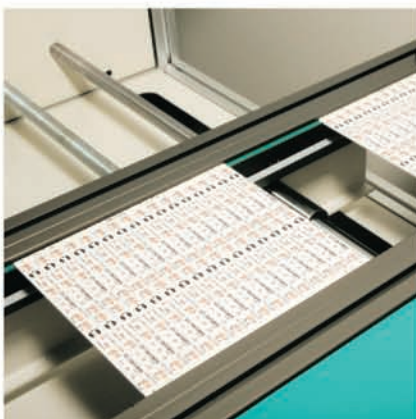
OK LED-G301



OK LED-B301



Production line



DC RGB SERIES

Input Voltage	12V
Operating Current	0.06 A
Power Consumption	0.72 W
Dimensions	53.4(L)x16.5(W)x6.9(H)mm
LED Interval	29.3mm
LED Module Interval	50 mm
View Angle	120°
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	100(Small Box)/1000(Large Box) Ctn

OK LED-RGB201



Input Voltage	12V
Operating Current	0.06 A
Power Consumption	0.72 W
Dimensions	84.4(L)x16.5(W)x6.9(H)mm
LED Interval	28.6mm
LED Module Interval	80 mm
View Angle	120°
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	100(Small Box)/1000(Large Box) Ctn

OK LED-RGB301



Input Voltage	12V
Operating Current	0.1A
Power Consumption	1.2 W
Dimensions	45(L)x45(W)x7.1(H)mm
LED Interval	28mm
LED Module Interval	80 mm
View Angle	120°
Operating Temperature	-30~+70 °C
Protecting Rating	IP 68
Box Packing	50(Small Box)/500(Large Box) Ctn

OK LED-RGB401



OK LED BAR

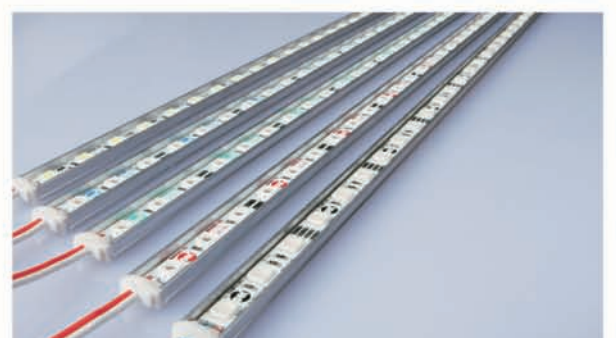
PCB Bar

Input Voltage	12V
Length	500mm
Width	6mm / 8mm / 12mm
SAMSUNG LED chip	



Aluminum Bar

Input Voltage	12V
Length	500mm / 1,000mm / 1,500mm
Width	12mm / 19mm
SAMSUNG LED chip	





Optimized panel for LED backlit Enhanced light diffusion property

Excellent in light diffusion as well as light transmittance.
Super in preventing eyes from being dazzled.
Higher friendly to millions of detailed RGB-mixes colors.
Higher impact strength due to its highly cross-linked polymers.



Excellent molding

Easy vacuum forming, extrusion and injection molding.
Easy workable properties like easy cutting and well gluing.



Comparison
Picture



Light Diffusion Sheet

OK GLASS

Quality comparison with acryl

		OK GLASS	Acryl
Usage		for LED lighting	for lighting
light diffusion		●	▲
light transmittance		●	▲
Color expression		●	▲
Processibility	Molding/Extrusion/Injection	●	X
	Cutting/Gluing	●	X
Impact strength		▲	X

Thickness & Dimension

2T	1,220 x 2,420mm
3T	1,220 x 2,420mm
4.5T	1,220 x 2,420mm



OK GLASS APPLICATION

Channel Sign / Backlit Sign / Forming Sign

Channel Sign



Backlit Sign



Forming Sign



OK SMPS

High Efficiency Device to Supply Stabilized & Qualified Electric Power



Waterproof
LED Switching Mode
Power Supply





GENERAL SPECIFICATION



Electrical Safety Approval : KC, EMC, EMS

LED Lighting Device

Waterproof Protective Grade : IP68

1-year warranty when the product is used within 75% of the rated load

Protective Function – short circuit, overload, over-voltage, over-temperature

External control (of voltage, current) enabled to suit the characteristics of LED

Utility Patent and Circuit Patent Pending

AC Input, Over-voltage protection (270Vac~POWER shut-off/260Vac auto-recovery)

ELECTRICAL SPECIFICATION

Model	K-100W	K-150W	K-200W	K-300W
AC Input Current Voltage : 200Vac ~ 240Vac (47~63Hz)				
AC Input Current	1.1A / 220VAC	1.6A / 220VAC	2.1A / 220VAC	3.1A / 220VAC
Output	12V / 8.3A	12V / 12.5A	12V / 16.6A	12V / 25.0A
Protective Function : over-voltage, over current, overload, short circuit, over-temperature				
Insulation voltage : IN-OUT: 3KVac, IN-FG: 1.5KVac, OUT-FG:500Vac				
Insulation resistance : IN-OUT, IN-FG, OUT-FG: 100M-ohms 500Vac				
Operational temperature : -20~50℃@75%, 60℃@60% LOAD				
MADE IN KOREA				
Weight	1.5KG	1.6KG	2.1KG	2.2KG
Dimension	223(W) X 80(L) X 54mm(H)	243(W) X 80(L) X 54mm(H)	273(W) X 85(L) X 54mm(H)	303(W) X 85(L) X 54mm(H)
1BOX	10PCS	10PCS	10PCS	10PCS

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MANUALE D'USO



Preparazione e procedura per l'installazione di LED in involucri scatolari.

Materiali ed utensili: trapano elettrico, asciugamano asciutto, avvitatore elettrico, silicone, connettori di protezione, spellafili, boccola, filo elettrico

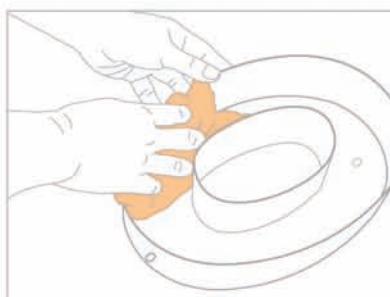
Prodotti: OK LED, trasformatore, lettera scatolare.



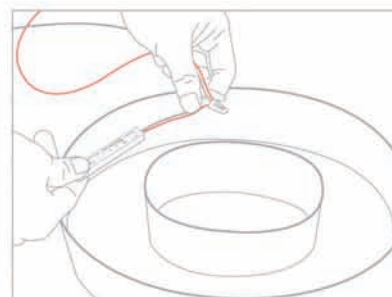
Precauzioni d'uso per l'installazione di led



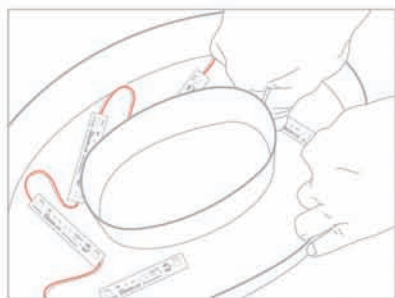
Forare l'involucro scatolare per consentire il collegamento del trasformatore e poi procedere alla posatura del modulo led (verificare la direzione della linea elettrica in corrispondenza del foro di uscita, la dimensione della boccola ed evitare l'interruzione del modulo led)



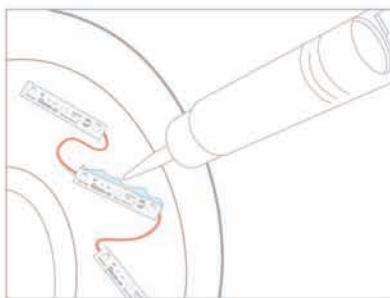
Eliminare completamente con un asciugamano asciutto i materiali di risulta come polvere, grasso ed acqua sulla superficie della lettera scatolare. Se la superficie non è pulita, il nastro adesivo del modulo led non si attacca bene.



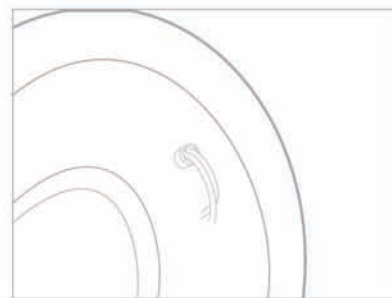
Cominciare a posare il modulo led in corrispondenza del foro di uscita e quindi della linea elettrica.



Procedere ad attaccare il modulo led in modo uniforme considerando l'angolo di luce.



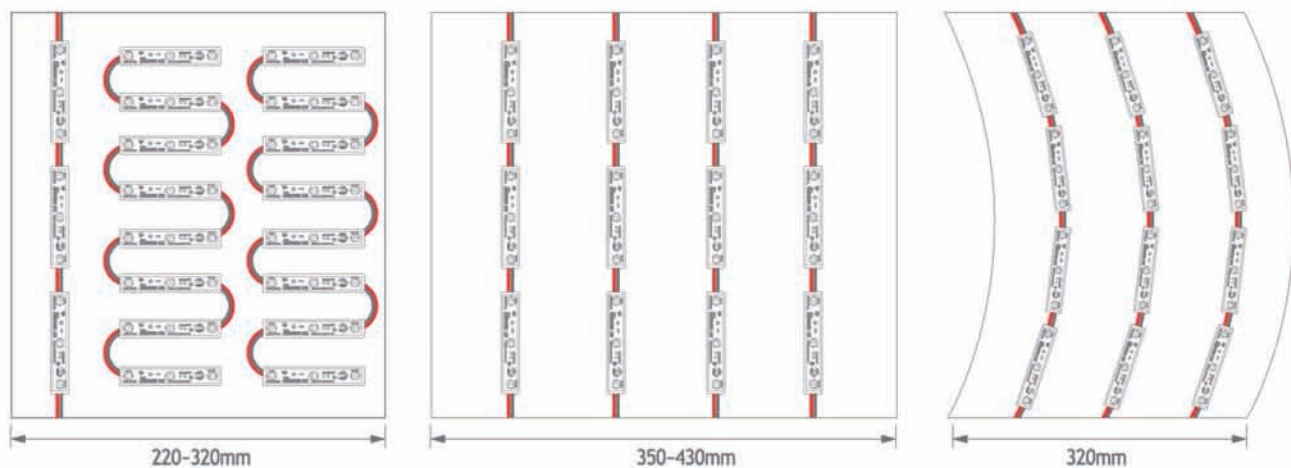
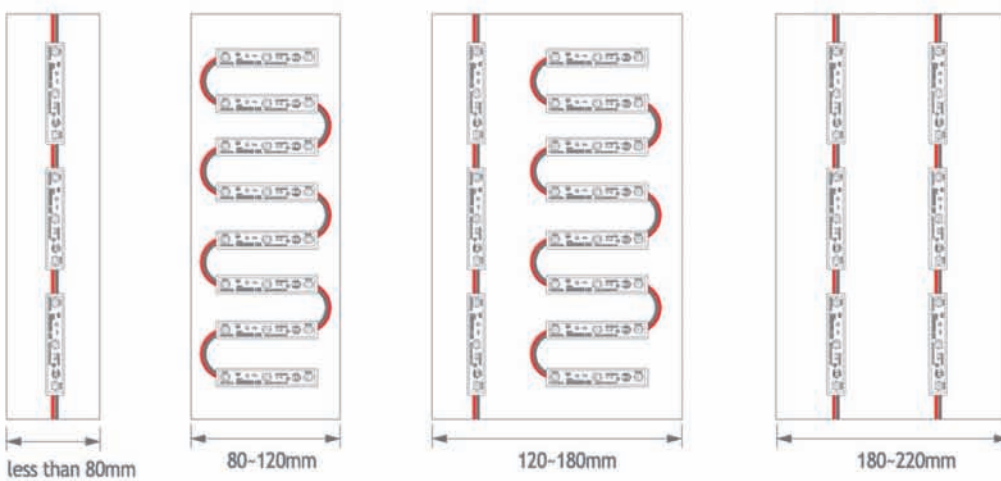
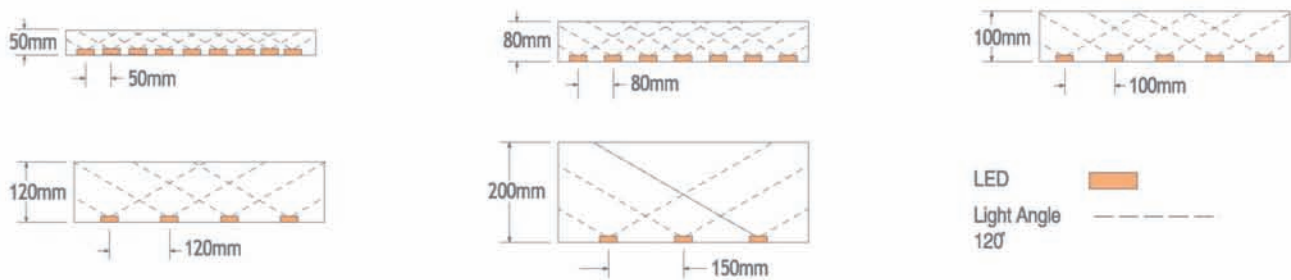
Una volta terminata l'applicazione del modulo led applicare, se necessario, il silicone per garantire una maggiore aderenza.



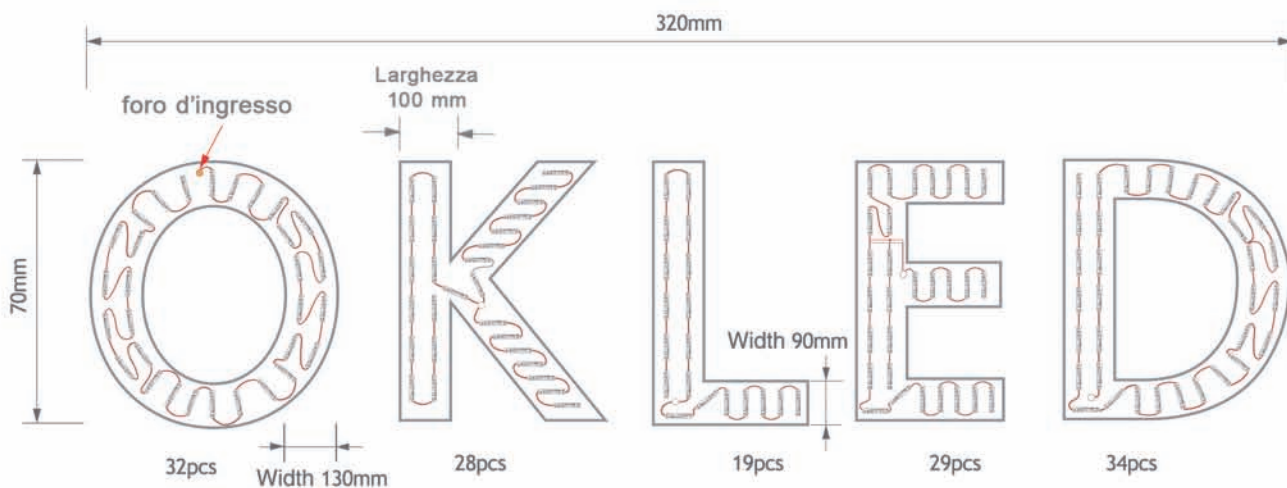
Tirare fuori i fili elettrici attraverso la boccola di uscita e collegarli al trasformatore consigliando una linea di collegamento di almeno circa 50 cm.

Al fine di prevenire eventuali dispersioni elettriche è preferibile, qualora venga utilizzato un comune trasformatore anziché uno impermeabile, installarlo separatamente.

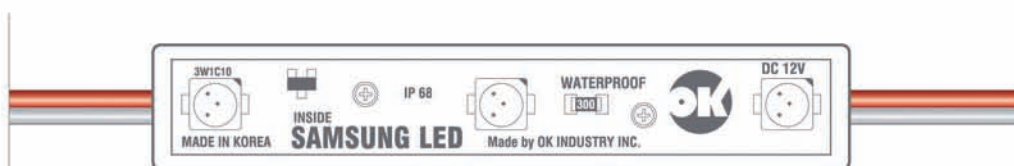
Esempi di allineamento del modulo led.



Posare il modulo led solo dopo aver accertato l'altezza e la larghezza dell'involucro scatolare e, naturalmente, a seconda della loro variabilità, verranno utilizzati il numero dei moduli led necessari (come da esempi illustrati).
Ad ogni modo se dovessero sorgere difficoltà nell'applicazione dei moduli led, Vi preghiamo di contattarci.



Spessore lettere 130 mm

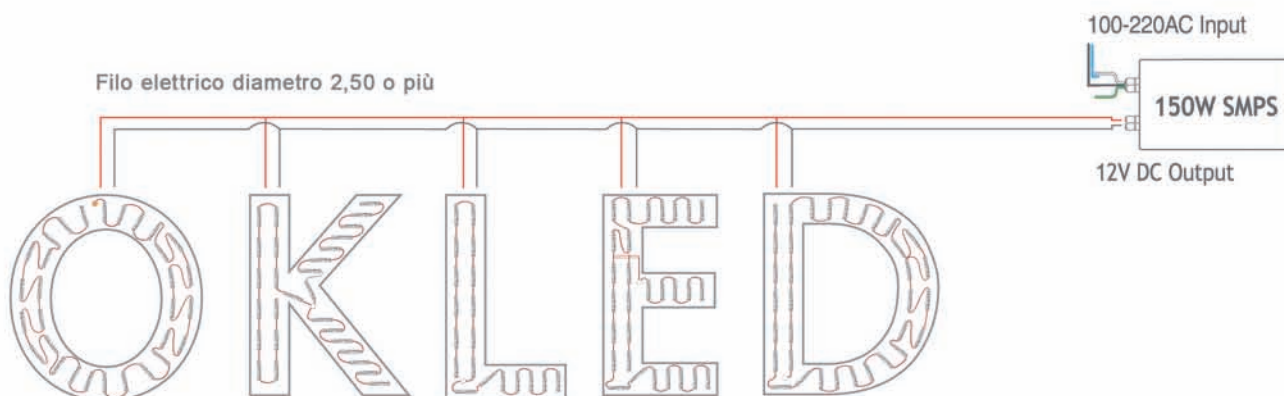


OK LED-W301

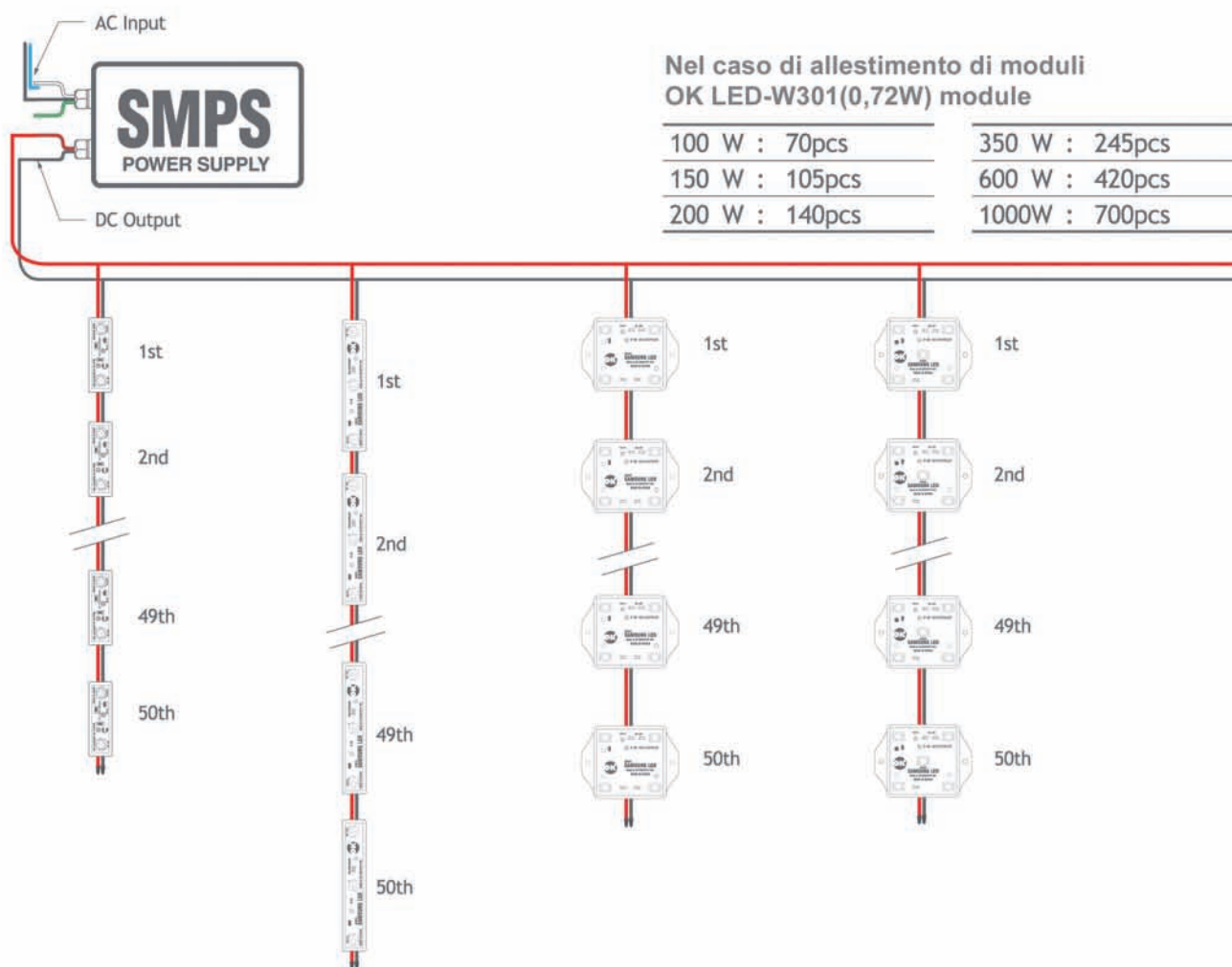
- O** 32pcs OK LED-W301
- K** 28pcs OK LED-W301
- L** 19pcs OK LED-W301
- E** 29pcs OK LED-W301
- D** 34pcs OK LED-W301

Nel caso sopra esposto sono stati utilizzati nr. 142 moduli OK LED – W301 (0,72W cad.) per un totale così calcolato: $142 \times 0,72W = 102,24W$. E' consigliabile, in questo caso, l'utilizzo di un trasformatore di 150W – 12V.

SMPS



Calcolo per l'uso di trasformatori correlati al modulo led.

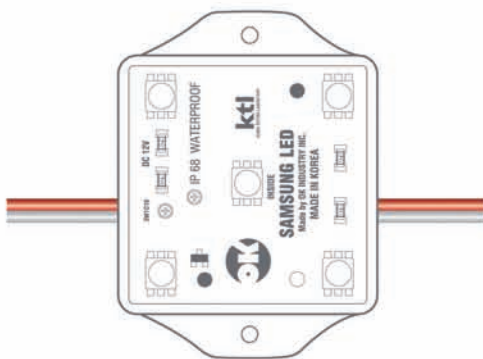
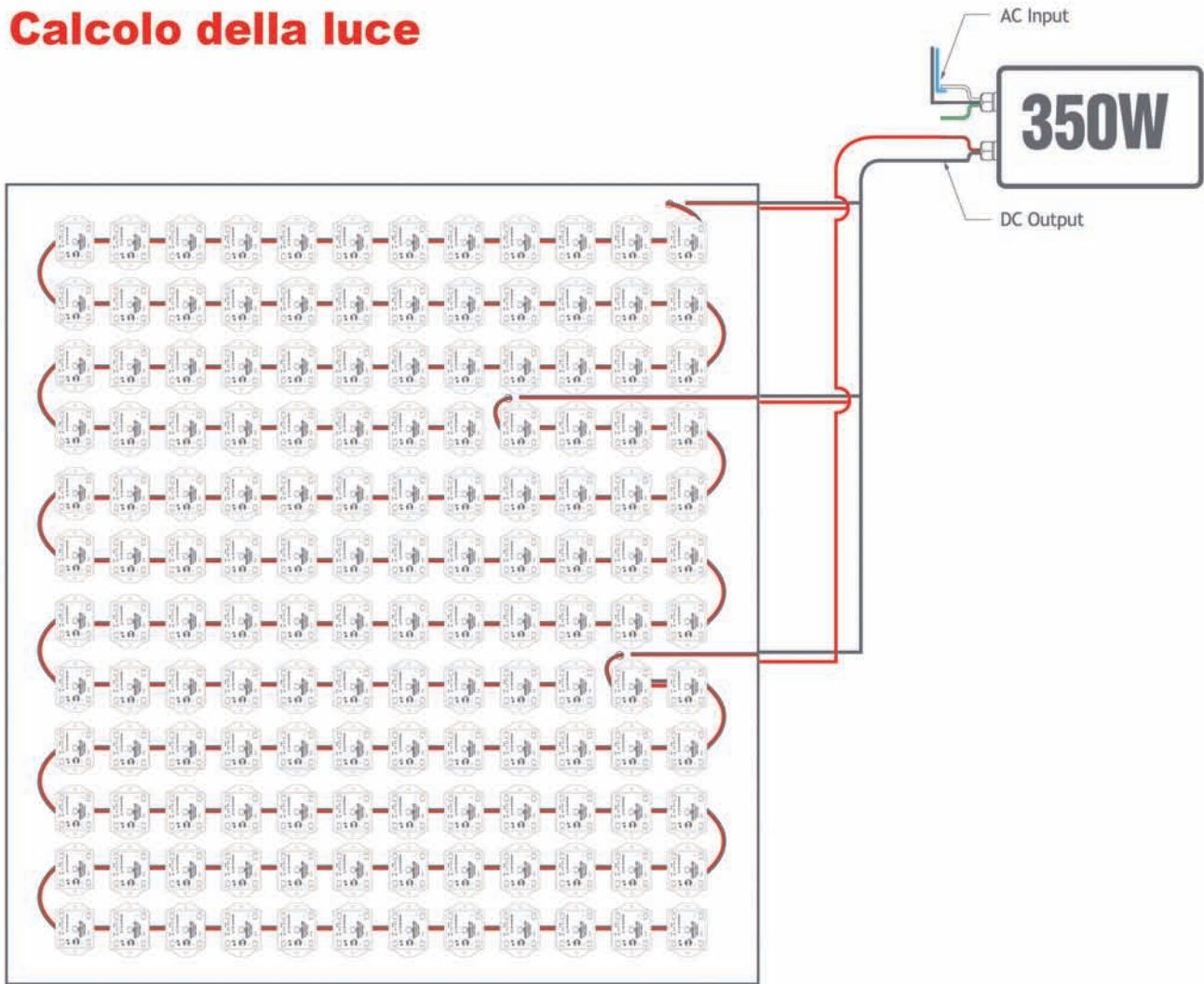


Risoluzione dei problemi nel caso di totale e/o parziale illuminazione.



Quando ci sono problemi di illuminazione	Verificare se il trasformatore è alimentato AC (Ampere Capacity) 220 (la regolazione di alimentazione varia da paese a paese). Controllare la connessione tra led e trasformatore. Nel caso di modulo OK LED, anche se un solo modulo della linea generale non si illumina ed è guasto, non causa problemi di illuminazione ai restanti altri moduli. Sostituire solo il modulo guasto al verificarsi del problema.
Quando ci sono problemi di luminosità o di illuminazione uniforme	Verificare se l'allineamento dei moduli sia stato effettuato correttamente sia in altezza che in larghezza dell'involucro scatolare. Verificare se molti moduli sono collegati ad una sola linea. Controllare la quantità dei moduli e verificare la capacità del trasformatore. Verificare se sono stati collegati non più di 50 moduli. Se la lunghezza del cavo di alimentazione al trasformatore è più lungo di 7 mt. possono insorgere problemi di illuminazione. Quindi ridurre il cavo di alimentazione quanto più è possibile.

Calcolo della luce



(Ex)

Lumen Calculation: LED chip for 20 lumen
Candela Calculation: LED chip for 6 Candela

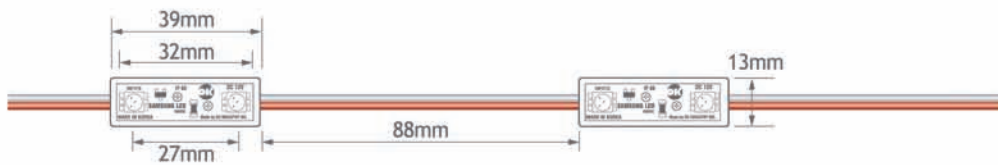
OK LED-W501 total 144cps used
350w OK smps usable
Each 50pcs wiring
38pcs wiring at Only last Wire

$$144 \text{ pcs} \times \frac{100 \text{ Lumens} = 14,400 \text{ Lumens}}{30 \text{ Candela} = 4,320 \text{ Candela}}$$

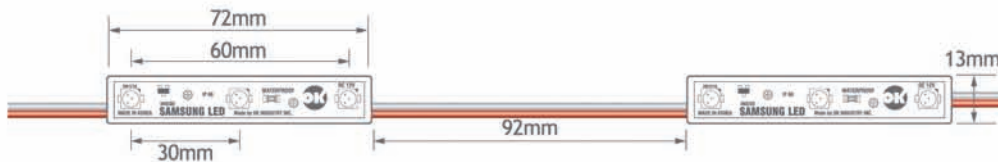
SPECIFICHE OK LED

	Input Voltage	Operating Current	Power Consumption	View Angle	Dimension	LED module Interval	Operating Temp.
OK LED-W201	12V	0.06A	0.72W	120°	39 x 13 x 8mm	88mm	-20~+70
OK LED-W301	12V	0.06A	0.72W	120°	72 x 13 x 8mm	92mm	-20~+70
OK LED-W401	12V	0.12A	1.44W	120°	45 x 45 x 8mm	88mm	-20~+70
OK LED-W501	12V	0.12A	1.44W	120°	45 x 45 x 8mm	88mm	-20~+70
OK LED-RGB201	12V	0.06A	0.72W	120°	39 x 13 x 8mm	88mm	-20~+70
OK LED-RGB301	12V	0.06A	0.72W	120°	72 x 13 x 8mm	92mm	-20~+70
OK LED-RGB401	12V	0.12A	1.44W	120°	45 x 45 x 8mm	92mm	-20~+70
OK LED-R/G/B201	12V	0.04A	0.48W	120°	39 x 13 x 8mm	88mm	-20~+70
OK LED-R/G/B301	12V	0.04A	0.48W	120°	72 x 13 x 8mm	92mm	-20~+70
OK LED-AW305	90~240V	50mA	1.0W	120°	65.5 x 17 x 10.8mm	100mm	-20~+80
OK LED-AW505	90~240V	50mA	2.0W	120°	50 x 50 x 9mm	100mm	-20~+80

OK LED W201



OK LED W301

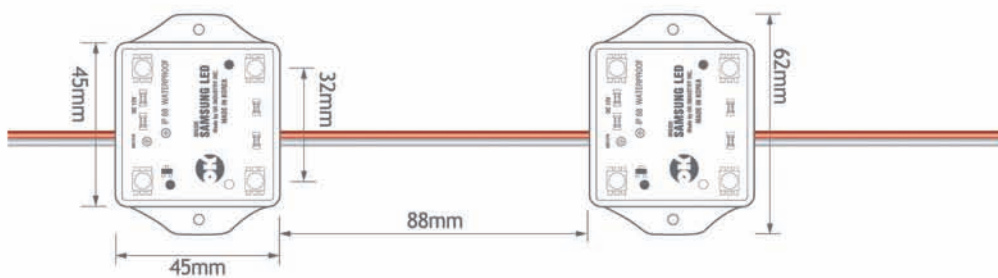


IP68
waterproof



50,000H
LIFE TIME

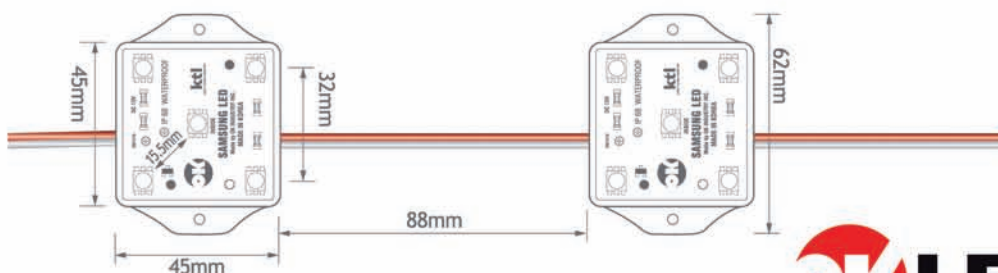
OK LED W401



AC SERIES
90~240V

+ REVERSE VOLTAGE PROTECTION +

OK LED W501



CONSTANT CURRENT DRIVING SYSTEM



Powered by
SAMSUNG LED

Caratteristiche del LED SAMSUNG

Caratteristiche Elettriche/Ottiche

(Ta : 25°C)

Item	Symbol	Conditions	Rank	Min.	Typ.	Max.	Unit	
Grado di Tensione	V _F	I _F = 60mA	BA	A1	3.0	-	3.1	V
				A2	3.1	-	3.2	
				A3	3.2	-	3.3	
				A4	3.3	-	3.4	
Tensione inversa	V _r	I _r = 10mA	-	0.6	-	2.0	V	

Coordinate cromatiche

(Ta : 25°C)

Condition	Rank	Model Name	x				y			
I _F =60mA	A3	SPMWHT5206N2BAA3S0	0.2725	0.2833	0.2799	0.2684	0.2564	0.2763	0.2826	0.2615

(Ta : 25°C)

Symbol	Conditions	Rank	Min.	Typ.	Max.	Unit
I _v	I _F = 60mA	S0	5.0	6.0	7.0	cd

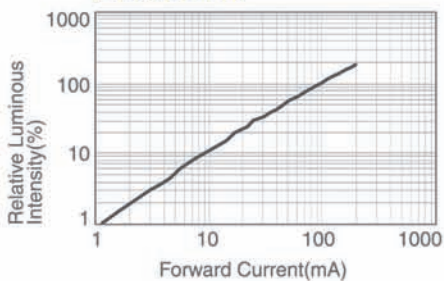
* Tolleranza: V_F: ± 0.1 V, I_v: ± 5 %, x,y: ± 0.01

* Apparecchi di misura dell'intensità luminosa: CAS140CT

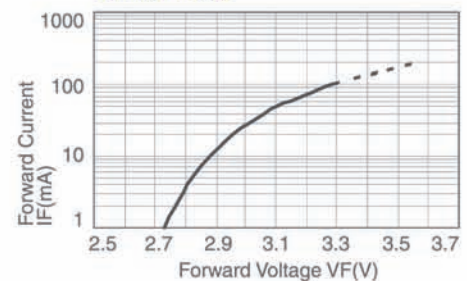
Grafico delle caratteristiche

Questi grafici mostrano i valori tipici

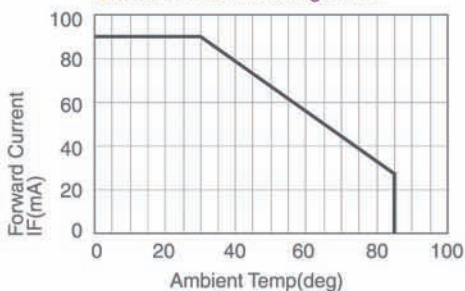
Relative Luminous Intensity vs. Forward Current



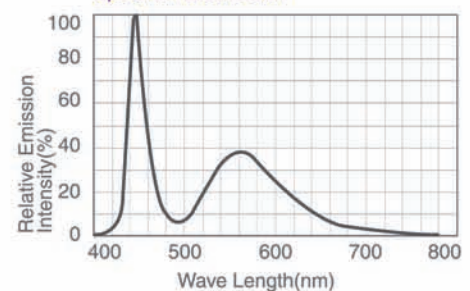
Forward Current vs. Forward Voltage



Forward Current Derating Curve

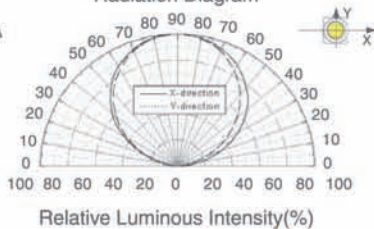


Spectrum Distribution



Radiation Diagram

I_F = 60mA
T_a = R.T



Tempo di esaurimento

Data ($T_{amb} = 40^{\circ}\text{C}$, $I_F = 60\text{mA}$)

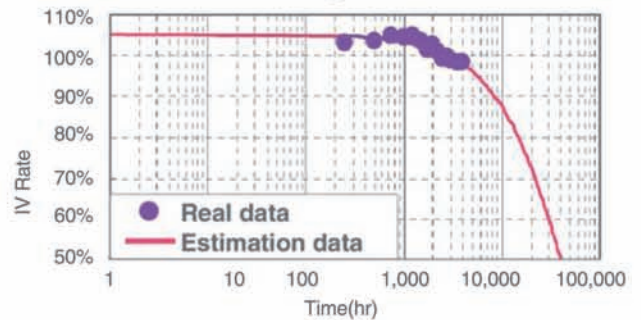
(FR4 PCB, 1.5mm thickness, 17 μm Plating thickness)

Time(hr)		1	500	1000	1500	2000	2500	3000	3500	4000
IV [cd]	Value	5.747	5.943	5.995	5.937	5.892	5.710	5.682	5.657	5.646
	Rate[%]	100.0%	103.4%	104.3%	103.3%	102.5%	99.4%	98.9%	98.4%	98.2%

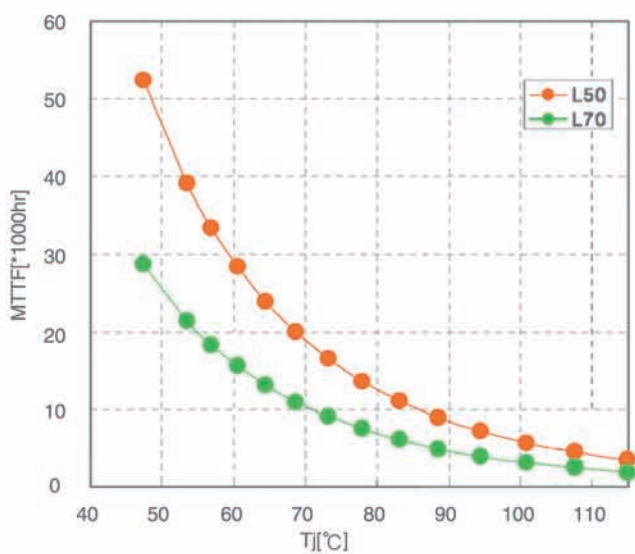
MTTF Calculation

MTTF	$T_a = 40^{\circ}\text{C}$, $I_F = 60\text{mA}$	$T_a = 25^{\circ}\text{C}$, $I_F = 60\text{mA}$
L_{70}	22,000hr	32,000hr
L_{50}	40,000hr	59,000hr

White LED IV Degradation Ratio



Junction Temp. vs MTTF



Certificati ed Attestati

CE Certificate AoC

E8N 10 12 75735 006



E8N 10 12 75735 007



E8N 10 12 75735 001



E8N 10 12 75735 002



E8N 10 12 75735 003



E8N 10 12 75735 004



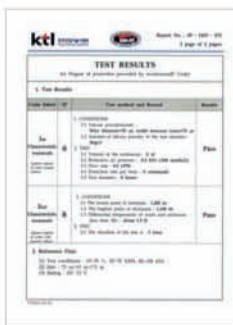
E8N 10 12 75735 005



CE Certificate DoC



IP 68 - Waterproof



KTL Certificate





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